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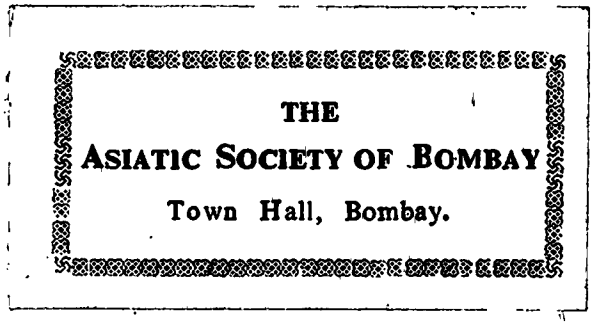

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THE

CYCLOPEDIA OF INDIA.

View taken on the ESPLANADE CALCUTTA, where is now CHANDPAL GHAT.
From an engraving by Thos' & Wm, DANIELL. 1797.

THE

CYCLOPEDIA OF INDIA

Biographical—Historical—Administrative—
Commercial

Vol. II

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Published by

THE CYCLOPEDIA PUBLISHING COY.

Calcutta

1908

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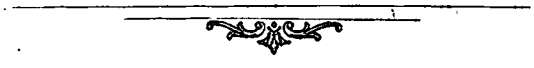
PRINTED BY THACKER, SPINK & CO.,

CALCUTTA.



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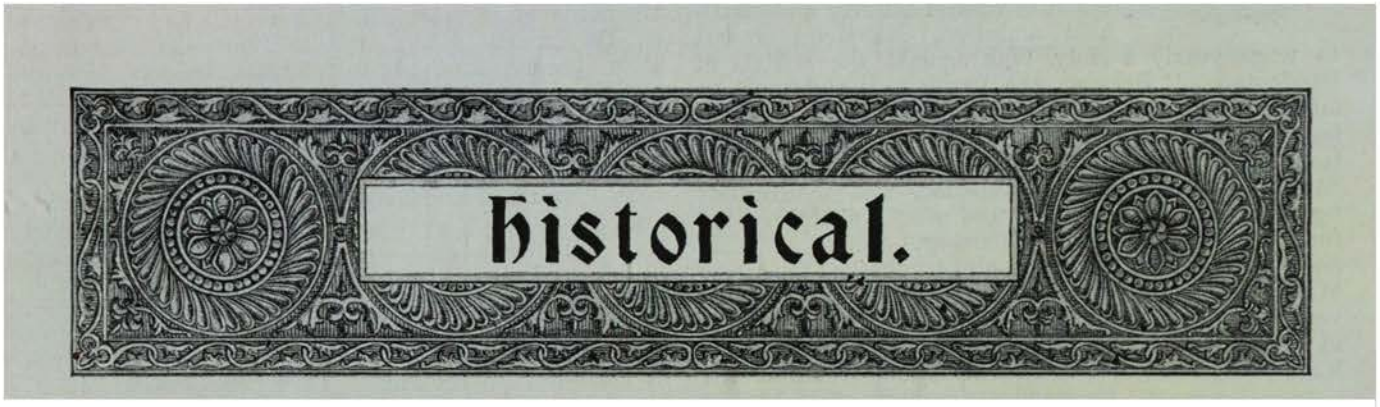


PART II.

MOHAMMEDAN RULE.

CHAPTER I.

EARLY MOHAMMEDAN INVASIONS: AFGHAN AND TURKI KINGS.

I.—Mahmoud (of Ghazni) and Mohammed Ghori.

In that glorious series of successes scored by the conquering Arabs of early Islam, India played but little part. Within a generation of the Hegira, the Arabs had conquered Egypt and North Africa, Syria and Persia. The outlying provinces of the Eastern Roman Empire were lopped off one by one, and the eternal struggle between Byzantium and Persia was terminated by the defeat of both at the hands of a common foe. The splendid Ommiad Khalifat, with its capital at Damascus, within a century of the Prophet's death ruled from the Oxus to the Ebro. The Hindu Kush, however, opposed a sufficient barrier to any Moslems who looked eagerly towards India, and the only wave of the mighty conquering flood which reached India was confined to a single corner of the vast peninsula, the lower valley of the Indus. In 712, at a time when the fatal battle of Xeres had just annihilated the Gothic kingdoms in Spain, and when Kashgar was being invaded by an Arab host, Sindh and Multan were added to the dominions of Islam by a young general, Mohammed Kasim. The oppression of the Hindu rulers and jealousies of race and creed, made the conquest of the mixed population in this region the work of a few months. Kasim's romantic career ended tragically, but the dominions he had conquered remained for a while under the successors of 'the Prophet,' though after a generation or two this leadership was only nominal. The Mohammedan government seems to have been honest and tolerant enough while it lasted, a characteristic which indeed was demanded by the necessity of conciliating the inhabitants, since the Mohammedans in Sindh received few, if any, reinforcements from head-quarters. Native dynasties soon rose again, and the early Arab triumph led to no great results. It was not the beginning of the Moslem conquest of India, but a single episode in the history of the land. The time was not yet ripe for extending the banner of Islam over the land of the Vedas and of Buddha. Moreover, the attack had been made from the wrong quarter, and had entered an unproductive region separated by barren wastes from the rich and tempting provinces of Hindustan. The Arabs had exhausted their strength in other conquests, and the subjection of India was reserved for the vigorous young race of Turks from Central Asia.

Arab conquest of Sindh, 712.

Failure of the Conquest.

The Turks were one amongst the many branches of that vast Mongol race, to which the Emperors of China, the Huns, the Sakas and the Yueh-chi belonged. The most ruthless devastators in the world's history, Attila, Jenghiz Khan, Timur, have all been Mongols. Attila was the chief of the Western Huns, who scourged Europe at a time when the White Huns under Toramana were afflicting India; Jenghiz Khan and Timur were chiefs of a later Mongol horde, known as Moguls; and Timur was the direct ancestor of the Mogul emperors of India. The Turks rose to power and fame midway between the Huns and Moguls. First appearing under that name in the 6th century, they at length during the 10th and 11th centuries became the dominant race in Asia and gave at least three great empires to history, that of the Seljuks, that of the Ottomans and that of the Ghaznavides. While Turkish warriors were acquiring control over the provinces of the Khalifat and building up the Seljuk empire under which the Khalifs sank to the position of *rois fénéants*, Alptagin, a Turkish warrior, founded a small principality at Ghazni, in the heart of the Afghan mountains. Sabuktagin, a slave of Alptagin, succeeded his master on the throne and rapidly extended the limits of his kingdom. Seistan and Khorasan were subdued, and a Brahman Raja in the Punjab was forced to pay tribute to the Turkish king. The invasion of India, thus pointed out by Sabuktagin, was undertaken on

Rise of the Turks.

Foundation of the Kingdom of Ghazni, 962.

a larger scale by his son Mahmoud who succeeded to the Ghaznavide throne in 997. A zealot of restless activity and insatiable ambition, Mahmoud vowed to wage yearly a Holy War against the infidels of Hindustan. "Between the years 1000 and 1026 he made at least sixteen distinct campaigns in India, in which he ranged across the plains from the Indus to the Ganges." Jaipal, that raja of the Punjab whom Sabuktagin had partially subdued, was overthrown by a powerful Turkish host and sought death on the funeral pyre rather than dishonour. His son Anandpal, with a measureless host, all but checked the career of the conqueror, but a sudden panic scattered his vast army, and Mahmoud became undisputed master of the Punjab. The plunder carried off to Ghazni was almost incredible in its value, and it stimulated the religious ardour of Mahmoud to fresh exertions. No concerted resistance seems to have been offered, and the disunion of the kingdoms of India served the conqueror in much the same way as the jealousies of native chiefs had assisted Alexander. Tomaras, Palas, Kalachuris and Chandellas, all succumbed beneath the overmastering energy of the Turk. Cities and forts innumerable were captured, temples and idols thrown down. The fame of Mahmoud's booty spread throughout Asia, and thousands of volunteers from beyond the Oxus came trooping into his camp. The year 1018 which marks his greatest campaign, saw the sack of Mathura and Kanouj, and the Bay of Bengal witnessed the terrific onslaught of the mountain zealots. The campaigns of Mahmoud concluded with the march into Gujerat and the sack of Somnath in 1026. The destruction of the sacred shrine and its famous linga, together with the removal of the temple gates to Ghazni, earned for the Iconoclast the execration of every pious Hindu and the veneration of every devoted Moslem. But Mahmoud aimed at no permanent conquest of India. His expeditions were little more than plundering raids: his followers clung to their Afghan home, and the forces of the Rajputs, though disunited, were too great to admit of a permanent occupation. Moreover, the wish to rule over India was probably lacking. Mahmoud had extended his rule over the greater part of Persia and chose rather to rule over a Moslem people than be the lord of 'infidels.' To Moslems he was the pattern king, zealous for the faith, and a mighty conqueror, yet wise and cultured, a liberal encourager of the arts, and a patron of learned men. At his cultivated court flourished Alberuni, the chronologist, famous for his account of India: Brihaki, whose memoirs are a mine of historical and biographical information: and Firdusi, whose great epic, the 'Shah Namah,' has earned him the title of 'the Persian Homer.' Mahmoud founded a great university at Ghazni, and was a lavish builder of mosques and productive public works. Such a man is not really a great constructive statesman. He does not elaborate principles of administration which will neutralize the possible incapacity of his successors, but he relies rather on his strong arm and vigilant activity to govern in accordance with the needs of the moment, and to meet all difficulties as they arise. Hence the dominions of Mahmoud were poorly knit together, and the vast empire rapidly fell to pieces when the genius of its creator was no more. For a century and a half, it is true, the Ghaznavide empire survived, but suffered continuous diminution in size and strength. As early as 1040 Persia and Khorasan passed over to the Seljuks, and the viceroys of the Punjab not seldom rebelled and sought to establish independence. But the Seljuk peril moved further west, and the Ghaznavides maintained their hold over Afghanistan in the Punjab. During the 12th century, however, a danger arose in their midst. An Afghan family inhabiting the castle of Firoz-Kol, in the hills of Ghor between Ghazni and Herat, entered upon a blood-feud with the later Ghaznavides, whose great ancestor they had eagerly followed into the plains of India. In 1155 Ala-ud-din, the 'world-burner,' sacked and razed the city of Ghazni, and drove his overlord into the Punjab. Thirty years later the nephews of this chief, Ghiyas-ud-din and Muiz-ud-din—generally known as Mohammed Ghori—overturned the once powerful empire of the Ghaznavides, and divided it between them. Ghiyas-ud-din remained for a time predominant in Afghanistan, while his brother overthrew the Mohammedan kingdoms of India, and then turned his arms against the Hindu kingdoms of the north. Sindh was subdued in 1182, and by the defeat of the last Ghaznavide, the Punjab fell into Mohammed's hands in 1186. Whatever assimilation between Moslem and Hindu had marked the last hundred years in the north-west was now brought to an end. Mohammed Ghori was imbued with the same fanatic zeal as his predecessor and prototype, Mahmoud the Iconoclast. Afghans, Turks, Persians flocked eagerly to his standard, and for years he harried the fair countries of Hindustan, overthrowing cities and kingdoms, destroying temples and idols. A decisive reverse experienced in 1191 at the hands of the Rajput lord of Delhi and Ajmir, Prithi Raja, was atoned for in 1192, when a charge of 12,000 horsemen in steel array shattered the Hindu chivalry. In 1193 Ajmir and Delhi fell into the hands of the conqueror, while in the following year Kanouj and Benares under their Gaharwar or Rahtore chiefs, as also Bundelkhand, became part of the Empire of Ghor. Mohammed was greatly assisted in these operations by his slave, Kutb-ud-din Aybek, who was appointed Viceroy of India. The latter busied himself with the reduction of Malwa and Gujerat, in which he was only partially successful, while another general, Bakhtiyar, with the greatest ease overcame the native dynasties in Behar and Bengal.* By 1205 nearly all India north of the Vindhyas had been subdued. Mohammed Ghori meanwhile busied himself with a disastrous expedition in Central Asia, but his Viceroy remained true

Mahmoud of Ghazni, 997-1030.

His Indian Expeditions.

Sack of Somnath, 1026.

Mahmoud's character and Court.

Rise of the House of Ghor.

Mohammed Ghori's Conquest of India, 1182-1206.

* The fall of most of the native kingdoms was alluded to on pp. 38-39, Vol. I.

to him and he returned to India to resume the sovereignty. His death which shortly followed (1206) severed the connection between India and Afghanistan, Kutb-ud-din becoming the Sultan of India, while Ghor and Ghazni remained subject to the house of Ghor. Though the dominion so magnificently conquered was lost to the house of Ghor, it was not lost to Islam. Mohammed's conquests were of a far more permanent character than those of Mahmoud, and his successors so consolidated them, that from his day until the Indian Mutiny of 1857 there was always a Mohammedan king upon the throne of Delhi. First came five dynasties of Turkish and Afghan kings who filled the throne from 1206 to 1526. In 1526 Babar's conquest ushered in the Mogul period; thenceforward until 1857 with a few short breaks a Mogul reigned as the Mohammedan Emperor of India.

Characteristics of the Mohammedan Period.

Now that India had a Mohammedan king of her own, and was no longer merely part of a wider empire, this history can confine itself almost entirely to Indian matters, without pausing to examine the political situation of the bordering countries. The three centuries prior to 1526, as also in large measure those succeeding, are to be studied mainly from a biographical point of view. The gradual conquest of the peninsula by Mohammedan arms gives scope, of course, to military history, but the illustration of the art of war remains rather the work of the specialist. Of constitution building, or civil development, such as fills so large a space in the history of Western nations, there is little to be said. Men, not methods, make up the history of the East. Nor did the religions or social condition of the Hindus undergo great change during the period under treatment. Beyond the conversion, forcible or voluntary, of many millions of Hindus, the religious system established in Puranik times suffered from no great upheaval. The Mohammedans quarrelled amongst each other over religion, and bitter enmity was stirred up between Sunni, Shiah and Sufi; but such quarrels affected little the conditions of the masses and must be only noticed in so far as they fostered disunion among the governing race, or threatened the dismemberment of the Delhi Empire. On the whole, the social system of the Hindus, if it changed at all, changed for the worse. Still an opening was to be found for those who rebelled against caste bonds. Admission into the great caste of Islam overthrew all barriers opposed by the Hindu system to the ambition of the hereditarily degraded ones. Many Sudras availed themselves of this opportunity, particularly in Bengal. Still, for the majority, things remained unchanged. Strife might rage, first between Moslem and Hindu, then between Moslem and Moslem, but the humble ryot knew little and cared little for the stirring deeds going on around him. It is then on kings and thrones that one's eyes must steadily be fixed. A "drum and trumpet history" may find no justification in the case of a progressive state where political, social and religious evolution is proceeding. Such a style of history would have been as inapplicable to the Hindu Period of Indian history as to modern England or ancient Greece. But in the Mohammedan Period the barrenness of national life and intellectual movements is so marked that history cannot but be mainly political.

Its interest mainly political.

II.—The Slave, Khilji and Tughlak Dynasties.

The Slave Kings of Delhi, 1206-1290.

Kutb-ud-din, the first Slave Sultan of Delhi, survived his master only four years. Most of his conquests were made previous to 1205, and the rest of his life was devoted to administration and building. The Kutb Minar, the tallest minaret in the world, was constructed according to his order. The empire which Kutb-ud-din did not live long enough to consolidate was established on a firmer and wider basis by the great Altamsh, one of the many Turkish slaves who at this period rose to eminence, alike in India, Egypt and Western Asia.

Kutb-ud-din, 1206-1210.

Altamsh, 1211-1236.

The greater part of Altamsh's reign was occupied with the repression of contumacious governors and wars against rebellious Hindus. The Rajputs of Malwa were defeated, and Mohammedan ascendancy more firmly planted north of the Vindhyas. The Mongol hordes of Jenghiz Khan appeared on the frontiers in 1221, but after ravaging the border provinces of Altamsh they turned their eyes westward, so that India had a short respite from barbarous invasion. The career of Altamsh was so successful that the Khalif of Bagdad sent to invest him with the robe of office as recognized sovereign of India. This recognition was marked by the introduction of a new silver coinage, the inscription on which—'Aid of the Commander of the Faithful'—asserted the connection between the Indian Sultans and the accredited head of the Moslem faith. Altamsh was succeeded after a short interval by his daughter, Raziya, the only female sovereign who ever sat on the Mohammedan throne of Delhi. Her kingly qualities had led Altamsh to indicate her as his heir, and she indeed displayed a capacity for rule seldom equalled by an Oriental woman. Learned, energetic, just and wise, she was equally fearless at the council board and at the head of her army, but the stern faith of Mohammed found little place for a female ruler. That she showed favour to an Abyssinian slave was the occasion of an offence which roused the Turkish chiefs against her, and after a short and chequered reign she was deposed and put to death. Ten years of plots and murders made up the inglorious reigns of a brother and nephew of Raziya, until in 1246, Nasir-ud-din, the youngest son of Altamsh, succeeded to the throne. A simple and religious gentleman, this monarch had no capacity for controlling the turbulent elements at work in the 13th century. Fortunately he was assisted, and served with consistent loyalty by Balban, a conspicuously able Turkish slave and a grandson-in-law of Altamsh. For twenty years Balban ruled as the vazir of his master, and for twerty years as sovereign in his own right. His ruthless severity and the rapidity of his strokes are famous in history. But it was only thus that the king of Delhi could make good his authority in such a time. The repeated inroads of Mongols, the disaffection of Hindus, the jealousies

Raziya, 1236-1240.

Balban (Sultan), 1266-1287.

and revolts of Turkish chiefs, the prevalence of robbery and brigandage, were elements of disintegration which but for a strong king, would have reduced India to a chaos. To resist the Mongols, Balban disciplined his army to the highest point of efficiency and himself remained constantly on the alert near his capital, ready to march at a moment's notice against the dreaded foe. His measures successfully warned off the Mongols, but as he was but seldom seen in the outlying provinces, the governors, with shortsighted policy, sought to make themselves independent. But when Tughril, governor of Bengal, revolted, his punishment became an awful warning to the rest. The slayer of Tughril was richly rewarded and the disaffected Hindus were inspired with fear by the severity of the conqueror. "The Sultan returned to Lakhnauti (after the defeat and death of Tughril) and there ordered that gibbets should be erected along both sides of the great *bazar*, which was more than a *kos* in length. He ordered all the sons and sons-in-law of Tughril, and all men who had served him, or borne arms for him, to be slain, and placed upon the gibbets.....The punishments went on during the two or three days that the Sultan remained at Lakhnauti, and the beholders were so horrified that they nearly died of fear."* A son of Balban was appointed Viceroy of the seditious province, and his descendants maintained the rule until after the Khilji dynasty of Delhi had passed away (1282-1339). Rebellious Turkish chiefs, whether landholders or officials, found their power ruthlessly curtailed. Thus Balban prevented anything in the nature of a barons' war, which would have been the signal for a widespread Hindu revolt. A year was spent in exterminating the outlaws and suppressing the forays of the hillmen, both of which had made travelling and commerce unsafe, and had even terrified the suburbs of the capital. So for sixty years to come, the roads were free from robbers, and the people became tractable, obedient and submissive.

The dignity of the imperial throne was rigidly upheld by Balban. "No sovereign had ever before exhibited such pomp and grandeur in Delhi.....For the twenty-two years that Balban reigned, he maintained the dignity, honour and majesty of the throne in a manner that could not be surpassed. Certain of his attendants that waited on him in private assured me that they never saw him otherwise than full dressed. During the whole time that he was *Khan* and *Sultan*, extending over nearly forty years, he never conversed with persons of low origin or occupation, and never indulged in any familiarity, either with friends or strangers, by which the dignity of the sovereign could be lowered."† Similarly he gave no high posts to vulgar or worthless persons; had no base favourites; abstained from drinking and low pleasures. This was an ideal but seldom attained by the Turk and Afghan kings of Delhi, and it largely explains Balban's success as a statesman and Sultan. He was, in short, one of the most notable figures among the Mohammedan emperors of India. But, like Louis XIV of France, he did too much himself. He trained no ministers, and he left no fit successors. One capable son he had had, who pre-deceased him, and the throne fell to a grandson, who within three years "drank and debauched himself into a hopeless paralytic." A reaction against the Turks took place, and the Afghan clan of the Khiljis mounted the throne of Delhi.

The Khilji dynasty lasted thirty years, and included six sovereigns. The first, Jalal-ud-din, was a mild old man of seventy years, who systematically refused to shed blood even for flagrant crimes. After the defeat of a revolt led by a nephew of Balban, the Sultan entertained the captive nobles as his guests. "He had shown great attention to those prisoners who deserved death, and had made them his guests. He had removed the fetters of rebels who all deserved punishment, and had set them free." Such unwonted clemency exasperated his followers, who were accustomed to look for dignity and severity in their rulers. The malcontents found a leader in Ala-ud-din, the Sultan's nephew. The simple, unsuspecting king was beguiled into a trap and brutally murdered. This base crime, for a time at least, brought its perpetrator no ill luck. Ala-ud-din was a powerful ruler, who reigned with unexampled vigour for twenty years, and greatly extended the Moslem dominion in India. He was even more successful in his conquests than Balban, the pre-eminent monarch of the preceding dynasty. His skill as a soldier had been proved by a successful invasion of the Deccan, and the capture of Deogiri, the Mahratta capital, during the life of Jalal-ud-din. Soon after his accession the new Sultan was confronted with the Mongol danger in the north-west, but a host of 200,000 Mongols were dispersed by the dash of the Moslem charge. Prosperity seemed to attend all the Sultan's undertakings, and in the words of Barni: "One success followed another; despatches of victory came in from all sides. Every year he had two or three sons born, affairs of state went on according to his wish and to his satisfaction, his treasury was overflowing, boxes and caskets of jewels and pearls were daily displayed before his eyes, he had numerous elephants in his stables and 70,000 horses in the city and its environs, two or three regions were subject to his sway, and he had no apprehension of enemies to his kingdom or of any rival to his throne. All this prosperity intoxicated him. Vast desires and great aims, far beyond him, or a hundred thousand like him, formed their germs in his brain, and he entertained fancies which had never occurred to any king before him. In his exaltation, ignorance, and folly, he quite lost his head, forming the most impossible schemes, and nourishing the most extravagant desires. He was a man of no learning, and never associated with men of learning. He could not read or write a letter. He was bad tempered, obstinate, and hard-hearted, but the world smiled upon him, fortune befriended him, and his schemes were generally successful, so he only became the more reckless and arrogant." Such wild schemes were the establishment of a new religion, and the dream of conquering the world in the form of a second Alexander. An uncle of the historian Barni counselled

The Khiljis, 1290-1320.
Jalal-ud-din, 1290-1295.

Ala-ud-din, 1295-1316.

Extends the Mohammedan Empire.

His character and vast schemes.

* Barni, *Tarikh-i-Firoz Shah.* Elliot, *History of India as told by its own historians*, Vol. III, p. 119.
† Barni, *ibid*, p. 100.

the Sultan to abjure this fool's paradise, to give up wine-bibbing and to reduce the still independent Hindu strongholds of Rajputana and Western India. The wisdom of this advice was proved when even the capture of the Hindu fort, Rantambhor, near Delhi, taxed all his energies. A series of mutinies and insurrections assisted to rouse Ala-ud-din from his security and pride. Having reduced the realm to order, he next directed his attention to the means of preventing rebellion in the future. The methods employed were extraordinary and tyrannical. Widespread confiscations of property took place: "the people were pressed and amerced, money was exacted from them on every kind of pretence. All the pensions, grants in land, and endowments in the country were appropriated.

Mutinies and revolts.

The people were all so absorbed in obtaining the means of living that the very name of rebellion was never mentioned.* Secondly, he provided so carefully for the acquisition of intelligence, that no action of good or bad men was concealed from him. No one could stir without his knowledge, and whatever happened in the houses of nobles, great men and officials, was communicated to the Sultan by his reporters..... The system of reporting went to such a length that nobles dared not speak aloud even in the largest palaces, and if they had anything to say they communicated by signs. In their own houses, night and day, dread of the reports of the spies made them tremble. .....The transactions in the bazars, the buying and selling, and the bargains made, were all reported to the Sultan by his spies, and were all kept under control. Thirdly, he prohibited wine-drinking and wine-selling, and also the use of intoxicating drugs. Dicing also was forbidden.....Fourthly, the Sultan gave commands that noblemen and great men should not visit each other's houses, or give feasts or hold meetings. They were forbidden to form alliances without consent from the throne, and they were also prohibited from allowing people to resort to their houses.....No stranger was admitted into a nobleman's house. Feasting and hospitality fell quite into disuse." These regulations involved a tyranny more galling than that of the most ruthless Roman emperor or the most autocratic Russian czar, in that they interfered more grievously with the liberties of the individual under his own domestic roof than any other edicts of which history bears record. They were supplemented by a series of provisions specially applicable to Hindus, and amounting to persecution. The Hindu, rich and poor alike, was ground down by the wheel of taxation into beggary, and was deliberately deprived not only of the luxuries, but frequently of the necessaries of life. A Mohammedan kazi or judge, consulted by Ala-ud-din on the subject of his government, declared these edicts, particularly those relating to Mohammedans, to be illegal. Still the Sultan defied the law and persisted in his repression. When in 1303 a renewed Mongol invasion necessitated a thorough reorganization of the royal forces, Ala-ud-din tried experiments in political economy. Being without sufficient treasure to keep on foot a large standing army at high pay, he limited the price of food by royal edict. By a systematic control of markets the price of grain was cheapened. Quantities of corn were stored up in the royal granaries, and in the event of famine it was distributed to the people at the fixed price. To sell at enhanced prices was an offence met by the severest punishments, but there is no doubt that the king's settlement was successful. A strong and contented army was kept on foot, and further Mongol attempts were so crushed that India enjoyed security from invasion for many a year and "the ryots carried on their agriculture in peace."

Repressive measures.

Mongol invasions, 1303, etc.

Experiments in political economy.

Ala-ud-din was now at the zenith of his power. He resumed his plans for the conquest of the Deccan, and from 1308 to 1311 scored a number of important successes. Rama Deva, the Yadava ruler of Deogiri, who had been conquered fifteen years before, had re-asserted his independence. He was again subdued and left in the position of a tributary prince. The same fate overtook the Raja of Warangal in the Telingana country, and an expedition directed to the Malabar coast penetrated as far south as Mysore and brought home quantities of plunder. Ala-ud-din had penetrated further into the Deccan than any of his Moslem predecessors, but Mohammed Tughlak, who shortly afterwards reigned in Delhi, enjoyed a wider Indian empire. The later years of the Sultan were embittered by the growth of a fatal dropsy and by the misbehaviour of his sons. He became infatuated with an unworthy favourite, Malik Kafur, which bred a deadly feud between Kafur and the royal family. Slaves and worthless people took the place of the wise and able administrators who had served the throne so faithfully. Kafur is not incredibly asserted to have hastened the death of his master, but the proscription of the royal family which he entered upon to secure his power only had for its end his own murder, and the throne passed to Mubarak Shah, a profligate and easy-going son of the late Sultan, seventeen years of age. All the wise enactments together with the undue exactions of the late reign were immediately reversed: the Hindus regained their liberty and every one did as it pleased him. The king shamelessly abandoned all religion and all morality, and became the tool of a vile Hindu favourite, styled Khusru Khan, a pariah from Gujerat. Rebellions were punished with the most brutal cruelty and finally Khusru Khan murdered his master and ascended the throne as Nasir-ud-din II.

Conquests in the Deccan, 1308-1311.

Death of the Sultan, 1316.

Mubarak Shah, 1316-1320.

The reign of terror which followed is unexampled even in the history of the East. "The harem of the Sultan was brutally ravished, everyone worth killing, was killed in the palace; three days after the murder of his sovereign Khusru took to wife the

Nasir-ud-din, 1321.

* *Mediæval India* (The Story of the Nations) S. Lane Poole. See also Barni in Elliot's History, Vol. III, pp. 222-5.

queen of his victim, a Hindu princess to whom such an alliance was an unspeakable profanation; the wives and daughters of the royal family and of the great nobles were delivered over to the scum of Khusru's pariahs; the flames of bloodshed and brutality reddened the sky, the holy Koran was desecrated, idols were set up in the mosques." This tyranny, equally loathsome to Mohammedans and Hindus, was ended after four months by the one man in the kingdom who enjoyed universal esteem. Ghazi Beg Tughlak, who had held the frontiers against the Mongols with unvarying success, put himself at the head of the old nobility, overthrew the contemptible upstart, and in deference to the general invitation mounted the throne as king under the name of Ghias-ud-din.

The Tughlak dynasty, 1321-1414.

The Turkish house of Tughlak ruled at Delhi for nearly a hundred years. Ghazi proved a just and vigorous king. Order was quickly restored, rebellions in Bengal and the Deccan were crushed; peace and prosperity reigned once more in Hindustan. Already old at his accession, the accidental death of the Sultan in 1325 only slightly anticipated his fate. He was succeeded by his son, Prince Jauna, who, under the name of the Sultan Mohammed ibn Tughlak, was the remarkable figure of the dynasty. We cannot improve upon Elphinstone's summary of his character. "It is admitted on all hands that he was the most eloquent and accomplished prince of his age. His letters, both in Arabic and Persian, were admired for their elegance, long after he had ceased to reign. His memory was extraordinary, and besides a thorough knowledge of logic, and the philosophy of the Greeks, he was much attached to mathematics, and to physical science, and used, himself, to attend sick persons, for the purpose of watching the symptoms of any extraordinary disease. He was regular in his devotions, abstained from wine, and conformed in his private life to all the moral precepts of his religion. In war he was distinguished for his gallantry and personal activity, so that his contemporaries were justified in esteeming him as one of the wonders of the age. Yet the whole of these splendid talents and accomplishments were given to him in vain: they were accompanied by a perversion of judgment which, after every allowance for the intoxication of absolute power, leaves us in doubt whether he was not affected by some degree of insanity. His whole life was spent in pursuing visionary schemes by means equally irrational and with a total disregard of the sufferings which they occasioned to his subjects, and its results were more calamitous than those of any other Indian reign."* Though mentally Ala-ud-din, the greatest Sultan of the preceding dynasty, cannot bear comparison with Mohammed Tughlak, yet his rough and ready methods were more successful than the idealistic schemes of this man of genius. Tughlak was too clever for his age: above all he was too impatient. The clash between a reforming spirit and a dull national conservatism finds an excellent parallel in Joseph II of Austria, most remarkable of the enlightened European despots of the 18th century. The projects which operated to the ruin of the country and the decay of the people, are catalogued by Barni as (1) Increase in the assessments of the Doab whereby cultivation was arrested, famine arose and loyal people became rebels. (2) The transference of the capital from Delhi to the more central Deogiri now re-named Daulatabad. The whole population of Delhi were ordered to remove themselves 700 miles to their new quarters. Delhi was left deserted and fell into decay, nor was the scheme successful. The unfortunate people were ordered to trek back to their original homes, but few survived to return. (3) The experiment of a copper token currency. Copper tankas were issued to pass at the value of the contemporary silver tanka, the object being to enrich the country by the increase of the currency. But the new tokens were forged by private individuals on all sides, and soon ceased to represent the actual credit of the treasury. "When trade was interrupted on every side, and when the copper tankas had become more worthless than clods, the Sultan repealed his edict, and in great wrath he proclaimed that whoever possessed copper coins should bring them to the treasury and receive the old ones in exchange." Mountains of copper coins poured into the treasury, and wonderful to relate the run on the reserve seems to have been met somehow or other, so that accidentally the people were enriched. Still the experiment had increased the distrust which the Sultan's methods of government inspired. (4) The fourth project which diminished his treasure, and so brought distress upon the country, was his design of conquering Khorasan and Irak. The coveted countries were not acquired, but those which he possessed were lost; and his treasure, which is the true source of political power, was expended. (5) As if the project of conquering Persia were too small, Mohammed dreamt of invading China, and in the preparation of a great armament to effect an impossible task poured out his money like water. The drain in the treasury necessitated fresh taxation, and an oppressive fiscal system inspired revolt. The taxes were not paid, and the Sultan, irritated beyond endurance, hunted the Hindus like wild beasts. Boundless prodigality was another source of evil. The treasury was drained of wealth to keep up an undue magnificence at court, and distinguished strangers were loaded with gifts in lands and money. Thus Ibn Batuta, the Arab traveller, on arrival at Delhi, was taken into favour, given fiefs and cash, appointed to a judgeship and finally sent as the Sultan's ambassador to China. Throughout the reign insurrection sprang up on all sides with Hydra-like persistency. As soon as one was quelled, another took its place. The Sultan, disgusted with the failure of his disinterested plans for the just government of his people, displayed the greatest cruelty. 'The more the people resist, the more I inflict chastisement.' Some were trodden under foot of elephants, and carved in pieces by the iron blades fast-

Mohammed Tughlak, 1325-1350.

His mistaken projects.

Drain on the treasury.

Revolts.

Generosity and cruelty of the Sultan.

* Elphinstone: *History of India* (Ed. Cowell), p. 404.

ened to the animal's tusks. A nephew of the Sultan, suspected of treason, was flayed and roasted alive, and his cooked flesh sent to his family, an act exactly parallel to that accredited by Greek tragedy to Atreus. It is these contradictions between acts of extravagant generosity and others of incredible cruelty which are so striking. The contrasts in Tughlak's character are worthy of treatment by a Shakespeare. He was not blind to the evil which was rampant, but tried to mitigate the public distress by remission of taxation in some cases, by open justice dispensed by his own royal hand, by free distribution of food and of agricultural loans.

Disintegration of the Empire begins.

These were, however, experiments tried too late, mostly in 1341; the mischief was already done and disintegration had set in. Bengal was lost to the Empire in 1339, the Deccan shortly afterwards, and when the Sultan died in 1350, the revolts in Oudh, Malwa, Gujerat and Sindh had not been suppressed.

Mohammed Tughlak had ruled over a larger and more splendid Empire than any of his predecessors. His father had recovered the distant provinces, and the reputation of Mohammed had given him in the early years of his reign an authority unprecedented in Mohammedan India. But his misdirected genius resulted in the ruin of this magnificent empire. As a ruler he was a transcendent failure, though as a character he inspires perennial interest.

He was succeeded by a cousin, Firoz Shah, already a man of middle age. The history of the reign written by a contemporary, Shams-i-Siraj Afif, though some allowance must be made for the spirit of eulogium customary at the court, supplies clear proof of the excellence of Firoz Shah, his virtues and munificence, his benevolence and the extreme affection in which he was held. The work is also valuable for the interest it displays in administrative details, and the evidence it accumulates as to the condition of India under Mohammedan rule. Firoz Shah was no great conqueror, but a good and far-seeing ruler. He arrested for a time further disintegration in the empire, though he made no very great effort to retain the revolted provinces. The Deccan was allowed to remain independent under the Bahmani dynasty, and two half-hearted expeditions to Bengal did not suffice to reconvert the king of that country into a viceroy subordinate to Delhi. Firoz, however, gained some military glory in Sindh, after protracted operations against a rebellious native chief, "The Jam," and reduced the Rai of Nagarkhot, who held the hilly country of Kangra. Still the limits of the Empire were more restricted than they had been fifty years before, and it is regrettable that more provinces and people were not able to enjoy the good government of this model Sultan. Firoz assuaged the wounds inflicted by the mad schemes of his predecessor and reversed Mohammed Tughlak's policy in every particular. The victims of the latter's ferocity or their representatives were indemnified. Demands in excess of the regular government dues were rigidly forbidden. "Such rules were made that the ryots grew rich, and were satisfied. Their homes were replete with grain, property, houses and furniture; everyone had plenty of gold and silver, no woman was without her ornaments, and no house was wanting in excellent beds and couches. Wealth abounded and comforts were general. The whole realm of Delhi was blessed with the bounties of the Almighty."* The Sultan strove hard to increase the productivity of his realm by public works of utility. Canals, dams, reservoirs, bridges, monasteries, colleges and inns for travellers were scattered profusely over the land. The great Jumna canal built by Firoz still supplies a large area with irrigation and brings water to Delhi. The people were able to reap two harvests instead of one. Waste lands were reclaimed. Twelve hundred market gardens were laid out, and the proceeds helped to swell the annual budget, of which a considerable share was expended in poor relief, in ministrations to the sick and donations to pious objects. The Sultan was also an enthusiastic builder. He renamed old cities and founded new ones. Amongst his foundations was Firozabad on the Jumna, ten miles from Delhi, which became the favourite royal seat. The Sultan's building operations supplied thousands with work, and there were no unemployed labourers in the kingdom. Firoz was especially fortunate in his great vazir Khan-i-Jahan (Lord of the World), a converted Hindu of good family, who had reached high office in the last reign. Until his death in 1371, the vazir remained faithful to his master, and he must receive a fair share of credit for the blessings conferred upon the people during this reign. The Hindus at this time received fair treatment, provided they paid the *Jiziya* or poll-tax and refrained from the public worship of idols. It is interesting to note that hitherto the Brahmans had been excused from payment of the *Jiziya*. But in accordance with the advice of the learned lawyers, Firoz ordered them to be taxed at a moderate rate. Though addicted to the wine-cup, the Sultan lived a holy and healthy life, free from vice, giving himself up to administration and the chase, and devoutly partaking in all the public prayers of Islam. The only mistake which can be reasonably attributed to him is the accumulation at Delhi of hosts of slaves, who were destined to become a rebellious element in the state, and the settlement of too large jagirs on his followers, a policy which tended to make the noblemen too rich and independent. Firoz died in 1388, worn out with years, but universally venerated by his people. He left behind him a brief summary of the *res gestæ* of his reign in which he modestly relates his efforts to restore good government under 'the help and guidance of the Almighty.' Among the interesting facts here mentioned and not alluded to by Afif is the voluntary adoption of Islam by great numbers of Hindus, in order to be exonerated from the *Jiziya*.

Firoz Shah, 1351-1388.

Benevolently governs a more limited Empire.

Public works.

Treatment of Hindus.

The memoirs of Firoz Shah.

III.—Dissolution of the Empire.

The multiplication of slaves and the accumulation of great fiefs in the hands of courtiers bore fruit in the next generation. During the twenty-four years which followed the death of Firoz Shah, six of his sons and

* Afif's *Tarikh*. Elliot, Vol. III, p. 290.

grandsons sat upon the throne, and witnessed the dismemberment of the Empire. The governors of provinces declared themselves independent and established hereditary dynasties in Oudh, Malwa and Gujerat. At the same time there took place a marked Hindu revival. The old Hindu rajas and the hill tribes regained their independence. When the Sayyids replaced the Tughlaks at Delhi in 1414, the so-called kingdom had shrunk to a small area round the capital, little more, indeed, than the Doab and Rohtak. The hardy Turks and Afghans had yielded to luxury and the enervation of the climate. Moreover, they had lost their distinguishing traits and the prestige of a conquering race by inter-marriage with Hindus and by the admission of numbers of Hindu converts into their fold. Another movement there was which contributed to shatter the power of Delhi. The Mongol attacks, lately remitted for a time, were now renewed by the great conqueror Timur, who with his Tartar horsemen descended like a scourge upon the plains of Hindustan in 1398. Timur had already conquered all the west and centre of Asia, when he was attracted to India by its reputed wealth. In his memoirs, whose genuineness is beyond dispute, he says: "My great officers told me that the inhabitants of Hindustan were infidels and unbelievers. In obedience to the order of Almighty God I determined on an expedition against them." Desire of plunder and religious motives together prompted the expedition. Timur pretended zeal for Islam, and yet the Mohammedan princes of India suffered equally with the Hindus from his devastating raid. The Punjab was rapidly overrun amid massacre and plundering, and Timur arrived before the capital where the Indian army of the Delhi Sultan was prepared for a decisive contest. The Indians, despite their courage and their elephants, were outnumbered and outgeneralled, and the conqueror gave thanks to God with tears. Infamous as Timur was for tolerating, even ordering, the most brutal massacres, the Moslem Ulema strove to arrange a ransom for the lives of the people. The proposition was accepted, yet whether owing to the Mogul's perfidy or the insubordination of his troops, slaughter and pillage began in the streets of Delhi,* and for several days the city was turned into a shambles. After a series of feasts and functions the Tartar horde left Delhi with immense spoils and carried on a 'Holy war' against the infidels (Hindus). The valley of the Ganges was turned into a waste as far as Hardwar, after which Timur felt that his mission was accomplished, and "quitted India, leaving anarchy, famine, and pestilence behind him." The 'conquest' had only been a plundering raid, like those of Mahmoud or Jenghiz Khan, though far more terrible. But it dealt another blow at the crumbling Delhi empire, and that is its chief importance in Indian history. Thenceforward, until the days of the Mogul empire, Delhi never regained her old ascendancy. The last Tughlak Sultan died in 1412, and for two years the Government was conducted by Doulat Khan Lodi, who made no pretensions to the royal dignity. In 1414 he was expelled by Khisr Khan, a Sayyid or descendant of the prophet. Khisr and three successors reigned at Delhi over a variable but always minute kingdom until 1451, fighting yearly campaigns against the rajas and Mohammedan chiefs who now encircled the late capital of the Indian empire. Anarchy and assassination at home there also were, and a powerful Afghan family, the Lodis, who had suffered from the jealousy of the Sayyids, at last succeeded in supplanting them on the throne of Delhi in the person of Bahlol Lodi in 1451.

Later Tughlaks, 1388-1412.

Break-up of the Empire.

Invasion of Timur, 1398-9.

The Sayyids at Delhi, 1414-1451.

Before pursuing the fortunes of the Lodi Sultan, which again elevated Delhi to a position of some supremacy in the north, we must briefly notice the new states which had arisen on the break-up of the empire at the end of the 14th century. Besides Bengal and the Deccan, over which the Delhi empire lost all control during the reign of Mohammed Tughlak, three great fiefs of the empire were converted into independent and important kingdoms just before or after Timur's invasion. Thus in 1394 the governor of the province now called Oudh assumed independence, and founded the Sharqi or Eastern dynasty, which included six members. Jaunpur, a city founded by Firoz Shah on the Gumti, became the capital of these kings, and gave its name to the new state. For nearly a century the Sharqi dynasty enjoyed considerable power, and the third of the line, Ibrahim Shah, who reigned from 1401 to 1440, was an energetic and enlightened prince, who left behind him some fine specimens of architecture, such as the Atala Mosque at Jaunpur. He could probably have mounted the throne of Delhi had he chosen, but contented himself with ruling his own superior dominions, and actually allied himself by marriage with the Sayyids. Ibrahim's grandson greatly extended the frontiers, and even conducted a conquering raid into Orissa. But when he tried conclusions with the new Lodi Sultan at Delhi, he was decisively defeated, and the kingdom of Jaunpur was re-annexed to Delhi in 1477. There now no longer existed a buffer-state between Delhi and Bengal.

Independent kingdoms.

Moslem kingdom of Jaunpur, 1394-1477.

In 1401 the Governor of Malwa, or at least of a part of the district known as Malwa, made himself independent and ruled over this strongly Rajput province with some success. He was a descendant of the Ghoris, but his grandson was assassinated and succeeded by a Khilji, who raised the kingdom of Malwa to a stronger position. In the days of Rajput ascendancy before the coming of Mohammed Ghori to India, the Parmars of Malwa had been constantly occupied in wars of self-preservation against the rival states around. Now, after a century of subjection to the Delhi empire, the kingdom of Malwa under a Moslem ruler underwent the same vicissitudes. There was strife with Delhi and Jaunpur, strife with the Deccan Sultans, and unending strife with the persistent Rajput Ranas of Chitor. Finally, Malwa

Moslem kingdom of Malwa, 1401-1531.

*Cf. with the state of affairs at Nadir Shah's occupation of Delhi in 1739.

was seized by Bahadur Shah, a great king of Gujerat, in 1531.

Gujerat, including Kathiawar, girt in by deserts and mountains, had successfully resisted the arms of Ghori and the slave kings of Delhi, and, like Malwa, had only been definitely annexed to the empire by the conquering might of Ala-ud-din. From the empire it broke away again about the same time as Malwa and Jaunpur, and in a similar way. Zafar Khan, who enjoyed the fief of Gujerat, assumed independence in 1396, and founded a Moslem dynasty which ruled the kingdom until Akbar annexed it to the Mogul empire in 1572. Wars with Malwa and Khandesh, with the Deccan kings of the Bahmani dynasty and the pirates of the Malabar Coast occupied much of the energy of these Gujerat Sultans. The second of the line founded Ahmednagar and Ahmedabad, the latter of which became the capital of Gujerat, and was adorned with mosques and tombs so many and beautiful as to earn for it the title 'Queen of the West.' The Gujerat coast towns had from the earliest times conducted most of the sea-borne Indian trade, and it was this trade that attracted the Portuguese soon after Vasco de Gama's famous discovery of the Cape route to India in 1498. The Mamluk Sultans of Egypt, as also the Venetians, had an interest in keeping out the new-comers. But after an initial defeat, the Portuguese admiral, Almeida, overcame the combined fleet of Egypt and Gujerat off Diu in 1509. Mahomed Shah, greatest of the kings of Gujerat, conciliated the earliest of the European settlers by offering them the port of Diu. The conquest of Goa by Albuquerque took place about the same time. With the annexation of Malwa in 1531, the kingdom of Gujerat reached its greatest extent. Its fall in 1572 was rendered inevitable by internal factions and intrigues.

Moslem kingdom of Gujerat, 1396-1572.

On the Southern border of Gujerat, but separated by almost impenetrable forests, lay the small and unimportant kingdom of Khandesh. It formed the lower part of the valley of the Tapti, and was ruled by a Moslem dynasty from 1399 to 1599, the founder having, like the founders of the states just mentioned, thrown off his allegiance to Delhi in the troublous times subsequent upon the death of Firoz Shah. This kingdom did not figure greatly in the history of the time: it seems to have enjoyed great prosperity, and to have been in some sort of subordination to the Sultans of Gujerat, whose protection was doubtless of great value.

Moslem kingdom of Khandesh, 1399-1599.

Of no greater importance than Khandesh, and even less interesting from the history connected with them, were the independent kingdoms set up about this time in Sindh and the Punjab. There were besides a host of Rajput chiefs whose greatness belongs to the pre-Mohammedan times, but who with the decline of Delhi asserted themselves in their new homes, chiefly in Rajputana, and achieved an independence which the Moguls in many cases so respected, that they have survived up to the present day. Such were the Rajputs of Chitor (now Udaipur), Jodhpur (Marwar), Bikanir and Jesalmir.

Rajput States.

Bengal had, like the Deccan, been independent of Delhi since the days of Mohammed Tughlak. At first rival kings reigned in Eastern and Western Bengal, but both portions were united in 1352 under a dynasty which reigned almost continuously until 1487. Lakhnauti, or Gaur, was latterly, as it had been originally, the capital of the Moslem rulers of Bengal. Four other Afghan or Turki dynasties filled up the century intervening between 1487 and Akbar's conquest of Bengal in 1576. Little is known of these rulers, but their sway seems to have been very extensive and to have included part of Behar, as well as Chittagong and, latterly, Orissa.

Moslem dynasties in Bengal, 1339-1576.

Mohammed Tughlak was the last king of Delhi in this period to hold authority south of the Vindhyas. With his failure to hold the Deccan the old Hindu kingdoms revived, and a new Moslem kingdom was founded. The kingdom of Warangal or Telingana, which roughly corresponded to the old Andhra dominion, raised its head, but the new State of Vijayanagar, founded in the place of the old kingdom of Karnatika which, like the other dynasties of the South, had succumbed to the Mohammedans in 1310, now became the paramount power in the peninsula proper. The new State was ruled by an offshoot from the Warangal dynasty: it extended from sea to sea south of the river Krishna. Further to the north Hasan Gangu, an Afghan or Parsian, succeeded in making himself king of the Deccan, and founded what is known as the Bahmani dynasty. The realm under his sway roughly corresponded to the Nizam's dominions of to-day together with the portion of the Bombay Presidency south of the Tapti, but at first exclusive of the Konkan. It extended from Berar on the north to the Krishna on the south. Hasan Gangu was assisted in the establishment of his kingdom by the neighbouring Hindu rajas of the south. But when they had served his purpose, he turned against them. Warangal was soon subdued and seems to have been permanently subordinated to the Bahmanids, though not quite extinguished. Vijayanagar was involved in ceaseless wars with its Moslem neighbour, and in spite of its vast resources was almost consistently beaten and forced to pay tribute. The Hindu rajas had only helped to throw off the slightly-felt yoke of Delhi in order to strengthen the enemies at their gates. The Moslem Sultans of Kulburga—Hasan Gangu's capital—besides being at strife with their Hindu rivals in the south, were not seldom embroiled with the Moslem kings of Malwa and Gujerat. The latter, like the Delhi emperors from whom they had broken off, were Sunnis, whereas Hasan Gangu and the majority of his descendants were of the Shiah persuasion. The feelings entertained between Sunnis and Shiahs at this time were not dissimilar from those which armed Catholics and Protestants against each other in the religious wars of Europe. The Shiah movement approximated more nearly to Brahmanism than Sunnism ever did, and the Moslems of the Deccan were far more influenced by Hinduism than the Moslems of the north. Hindus formed

Kingdoms of the Deccan.

The Bahmani kingdom and Vijayanagar.

Character and history of the Bahmanids.

a far greater portion of the population under the Bahmani kings than under the emperors of Delhi; hence the treatment meted out to them was more favourable. A tolerant spirit was abroad: we find even regiments of Moslems taking service under the Rajas of Vijayanagar against the Moslem Sultans of the Deccan. The secular struggle waged between the kings of the Deccan and of Vijayanagar was then mainly of political import. The Hindu rajas strove to possess themselves of the fertile Doab of Raichur; the Moslem Sultans as firmly resisted these attempts. The history of the Bahmanids is redolent of crime and slaughter: indiscriminate massacre, the dagger and the poison cup are all too common. Several Sultans were absolute butchers, others weltered in vice or drowned themselves in drink. The two most notable Sultans were Mohammed I, who distinguished himself by successful operations against Vijayanagar, and Firoz Shah, whose religion was woman, but who eagerly studied literature and science. The first was the son of Hasan Gangu, the second began to reign in 1397 and married the daughter of Deva Rai of Vijayanagar. The kingdom finally broke up from internal causes. The governors of the provinces broke out into rebellion, and established independent kingdoms, whose fortunes we are here unable to trace. Even the nominal supremacy of the Bahmanids came to an end in 1526. Their dominions were divided among the Adil Shiahs of Bijapur (1489-1686), the Kutb Shiahs of Golkonda (1512-1687), the Barid Shiahs of Bidar (1492 circ. 1609), the Nizam Shiahs of Ahmednagar (1490-1595) and the Imad Shiahs of Berar (1484-1572). The dates of their extinction mark their subjection to the Mogul empire, a process which was not concluded until the time of Aurangzeb. Of all these kingdoms that of Bijapur was the most powerful, and by reason of its dealings with the Portuguese, the most interesting.

Break-up of their Empire, 1526.

The kingdom of Vijayanagar has a history of its own, but its main interest lies in the relationship with the Bahmanid kingdom, the constant and futile wars which exhausted the strength of successive rajas. Krishna and Deva Rai were the greatest of these sovereigns, and Deva Rai, a contemporary of Firoz Shah Bahmani, was the only raja of Vijayanagar who scored a decisive success against his Moslem neighbour. A certain Abdur Razzak was sent by a successor of Timur as ambassador to Vijayanagar, and subsequently wrote an interesting account of his visit and the state of that kingdom in the middle of the 15th century. The realm seems to have been prosperous and well populated: it abounded in temples and was guarded by eleven lacs of men and more than 1,000 elephants. "The city of Vijayanagar is such that eye has not seen nor ear heard of any place resembling it upon the whole earth."* It had seven fortified walls, one within the other, and in the very heart of the city was situated a magnificent royal palace, where many rivulets flowed through channels of cut stone.

The rajas of Vijayanagar.

The dismemberment of the Bahmani kingdom upset the balance of power in the peninsula. The great Hindu kingdom became more formidable and at last gained possession of the Doab of Raichur. The Sultans of Bijapur were pleased to obtain the assistance of Ram Rai, the last raja of Vijayanagar, against the Moslem Sultan of Ahmednagar. But the overbearing insolence of Ram Rai at length banded together all the Moslems against him. The divided Sultans forgot their quarrels and coalesced against the enemy of their faith, with the result that the Hindus were defeated in the great battle of Talikot, and the Hindu Empire of the south was shattered. But the Mohammedan confederates, divided by jealousies, were unable to annex much of the conquered kingdom. The rest of the territory remained in the hands of petty Hindu chiefs, some of whom are still to be traced in the poligars of the Madras Presidency, and others such as the Rajahs of Cochin and Travancore, obtained a more considerable independent power. The greater part of Vijayanagar, however, is now covered by the Madras Presidency and the native state of Mysore.

Fall of Vijayanagar, 1565.

IV.—The Character of Mohammedan Rule in the Afghan Period.

The spread of Mohammedan rule and civilization over India bears some slight analogy to the earlier dissemination of Aryanism over the sub-continent. The Aryan Hindus spread their civilization over India in three stages and during three distinct periods. In the Vedic Age they conquered the Punjab, in the Epic Age they subdued the northern plains—Hindustan proper, and in the Rationalist Age they penetrated the Deccan and carried their religion and civilization to the south. Similarly Mahmoud of Ghazni conquered the Punjab; Mohammed Ghori and the Slave kings subdued Hindustan, and the Khilji dynasty carried their arms victoriously over the Deccan. The empire became dismembered, but the formation of independent Mussalman states carried on the steady expansion of Mohammedan power. Finally, the Moguls came and erected a greater empire, as the kings of Magadha had done in the Buddhist period. Akbar crowned the edifice as Asoka had done before him. Politically the progress of Islam displays the same unsatisfactory features as we have noticed in the Hindu periods. "The history of Mussalman India treats of a consecutive line of Sultans; it betrays the utter insecurity of thrones and dynasties. The government was spasmodic, good or bad according to the virtues or vices of the reigning Sultan. The dominion was sometimes expanded by further conquests: sometimes it was contracted by internal revolutions." Benevolent rulers alternate with fanatical butchers or vicious debauchees. The security enjoyed under a mild and tolerant sovereign is rudely shattered by a palace intrigue and a blood-thirsty assassination. The rise and fall of dynasties, and the lack of stability enjoyed by a despotically governed state is thus exemplified by the Mussalman and the ancient Hindu rulers of India alike. But if anything, the Mussalman was a more typically oriental despot, more cruel and oppressive than his Hindu prototypes.

Stages of Mohammedan conquest.

Insecurity of the government under the despotic principle.

* Elliot's *History*, Vol. IV, p. 110.

The explanation can doubtless be found in the fact that he was a foreigner in the land dependent chiefly for his position on military force. Moreover, he was the representative of a militant religion, severely antagonistic to the religions of the country. Still, Mohammedan rule in the three centuries before the Mogul empire was established was not without its saving graces. Oppression, intolerance and cruelty may have been the usual characteristics of the Bahmanid Sultans, but a number of mild, tolerant and capable sovereigns sat upon the throne of Delhi. Even an oppressor like Ala-ud-din did much for the country's security and prosperity, and Mohammed Tughlak, for all his failure, was animated by the right motives. Moreover, the Afghan rulers did not as a rule disturb the internal administrative arrangements. "The mass of the people continued to live under their anciently constituted authorities, whether hereditary landlords (zemindars) or the communistic village system. They were less harassed by wars than their brother peasantry in Europe during feudal times. "Dynasties succeeded dynasties, wars swept by the fenced and defended villages, but the agriculturists continued their useful labour from century to century, little caring who sat on the throne of Delhi, or on the provincial *masnud*. The follies and crimes of kings, which fill so large a space in histories, did not generally touch the well-being of the masses; wars and dissensions among rival chiefs generally left them at peace; and acts of oppression affecting the agricultural population were not frequent, because they were not conducive to the interests of the rulers themselves." The raids of Mahmoud no doubt brought the ryots to the verge of destitution as did the invasion of Timur, four centuries later, but when once the Mohammedans had settled in the country, they had little to gain and everything to lose by plundering their subjects. Even during the actual conquest it was the rich shrines of Hindu gods rather than the mass of the peasantry who suffered from the greed of the conquerors. While few of the Delhi emperors were actively destructive of the people's well-being, several were zealous promoters of the national prosperity. The canals and public works of Firoz Shah Tughlak cannot but have increased the productivity of the country, and the economical experiments of Ala-ud-din Khilji, we are told, ensured a sufficient livelihood to all and sundry. The general prosperity of the country and the magnificence of the cities is also borne out by the accounts of foreign travellers, Nicolo Conti the Venetian and Abdur Razzak the Tartar.

The masses on the whole free from oppression.

Prosperity of the country.

Nor was the social and religious system of the Hindus unduly interfered with. Although Islam gained a firm footing in the country, and mosques were erected in every town, the Hindu, while despised as an idolater, was not, with rare exceptions, converted by force. After the first massacres, dictated by the fanaticism of the conquerors, were over, the Hindu was given the option of adopting Islam or paying the *jiziya*, a poll-tax levied on the males. Numbers no doubt preferred the first alternative, particularly where, as in the lower castes, to enter the single caste of Islam meant exemption from the contempt and social degradation meted out by Brahmans to Sudras. The social system of Puranik Hinduism had granted a monoply of power to the highest hereditary castes. But even a Sudra or a Pariah might hope by adopting Islam to rise in accordance with his merits. Some such did rise to the highest pinnacles of power and became vazirs under the Delhi kings. The majority of Hindus, however, retained their religion and their social system at the expense of the *jiziya*, and were but little molested. Hinduism, of course, sank to a subordinate position, and Sanskrit learning died a natural death. Still the period was not without native religious movements. Several great Vishnava reformers flourished at this time, and the movement, though it originated in the independent south, spread even to Bengal and Hindustan. Ramanuja, who lived in the Karnatik in the 12th century, was followed by a series of missionary apostles, who proclaimed the existence of one god under the title of Vishnu. This faith in popular monotheism was preached by Ramandanda in Hindustan during the 14th century, and by Vidyepati and Chaitaniya in Behar and Bengal respectively, during the 15th century. It was preached to Mohammedans as well as Hindus, and was perhaps an attempt to combine the essence of the two religions. But it appealed pre-eminently to the Hindus and it gave an impetus to the new languages, Hindi and Bengali, which were being evolved from the old Prakrits. To the same age belongs Nanak, who by preaching a monotheistic Hinduism in the Punjab founded the fraternity of Sikhs, at first a peaceful sect, later a valiant and fanatical military power.

Persistence of Hinduism.

Religious movements.

Literary culture went hand-in-hand with those religious movements during the age of the Afghan rule. A mass of sacred literature and of songs and poems was composed in Hindi and Bengali, but native literature in this period flourished rather in the south, where the glorious Hindu kingdom of Vijayanagar held sway. Thus the Tamil language, which had formerly been the vehicle of the Buddhists and Jains, was now employed by the votaries of Siva and Vishnu. Sanskrit survived in Vijayanagar, and the brothers Sayana and Madhava, both ministers at the court of the first king, wrote, the first, valuable philosophical and speculative works, the second, a renowned commentary on the Vedas.

Literature. (*a*) Hindu.

But literature flourished more abundantly at the court of the Delhi Sultans. Many of these sovereigns were great patrons of art and learning. Almost every reign had its own historian, some even two or three. The writings of these men, to be found in Elliot's valuable "History of India as told by its own historians," deal mostly with the lives and doings of the kings, but some few touch upon the movements of the time and the conditions of the people. Some of the kings themselves compiled memoirs, and others were zealous students of the Koran. In matters of art the Mohammedans excelled all predecessors. The Kutb Minar is a standing testimony to their artistic culture; the Jama Masjid at Delhi, the Atala Mosque at

(*b*) Mohammedan.

Jaunpur and the Golden Mosque at Gaur eclipse the architectural achievements of the Hindus. The emperors likewise built more magnificent palaces and laid out more extensive gardens than India had been acquainted with. Finally, a new and uniform gold coinage was introduced, a useful common law for criminal and administrative cases was built up, and the empire gave birth to a new language, the Urdu or Hindustani, formed by a combination of the Persian and Arabic of the early Mohammedan conquerors with the vernacular of Hindustan, as spoken in the region round Kanouj.

Afghan architecture, law, etc.

CHAPTER II.

THE MOGUL* EMPIRE.

I.—The Foundation of the Empire.

Bahlol, the Afghan chief of the House of Lodi, held the throne of Delhi which he had seized from the last of the Sayyids for thirty-seven years. Having been semi-independent viceroy of the Punjab, he once more added that province to the dominion of Delhi. He subdued the small principalities round the capital, and by the recovery of Jaunpur† he once more stretched out the Eastern frontier as far as Behar. Behar itself was subdued by Sikandar Shah, the son of Bahlol, so that the frontier of the empire once more extended to Benares and marched with the independent kingdom of Bengal. The power of Delhi would seem to invite comparison with that of a century before, but in reality there was little cohesion to hold the empire together. The provinces were governed almost independently by "an aristocracy of rapacious and turbulent chiefs, for the principle of bestowing on followers vast jagirs, which were converted into hereditary governorships, had steadily grown in the later years of Afghan rule." That the empire was even more loosely strung together than the Saxon kingdom in England in the time of the great Eoldormen was proved by the events of the next reign. Sikandar was succeeded by his son Ibrahim, third and last of the Lodi kings. He gave himself airs and made himself unpopular with that powerful class—the Afghan noblemen—on whom his power depended. Revolts arose in the east and in the west, and the state was subject to such anarchy that at last Ala-ud-din, uncle of the Sultan, betook himself to Kabul to seek the assistance of its king in wresting the throne of Delhi from its incompetent possessor. Babar liked the project well, but he intended to seize the dominion of Hindustan for himself, and not to play the game of another. He is one of the most interesting and fascinating figures in Indian history. Descended from both Jenghiz Khan and Timur, he added to the energy of the Mongol the courage of the Turk and the culture of the Persian. About 1494, when he was but twelve years of age, he was called to rule over the small kingdom of Farghana (Khokand) on the Jaxartes, the only part of the extensive empire of Timur which remained in the family of that conqueror. Babar conquered Samarkhand when still a youth, but was forced to fight hard against the Uzbeg Turks for both possessions. On the whole, his struggles were ineffectual, and he had to content himself with a small kingdom in Afghanistan which he acquired in 1504. In Kabul he spent his manhood, and finally abandoned the hope of a restored empire in Central Asia for the new scheme of an Indian conquest. Years of arduous adventure and desperate expeditions made of him a seasoned warrior and an experienced general. But he was also a profound politician, an educated and accomplished man, an eminent scholar in several languages, an elegant poet, a fastidious critic, an exact observer, and a great admirer of nature. "Good-humoured, brave, munificent, sagacious, and frank in his character, he might have been a Henry IV. if his training had been in Europe; and even as he is, he is less stained, perhaps, by the Asiatic vices of cruelty and perfidy than any other in the list of Asia's conquerors."* Babar's life and character find a fitting memorial in the Memoirs written by himself. "Babar's memoirs form one of the best and most faithful pieces of autobiography extant; they are infinitely superior to the hypocritical revelations of Timur, and the pompous declaration of Jehangir—not inferior in any respect to the 'Expedition' of Xenophon, and but little below the Commentaries of Cæsar." The greater part of the Memoirs is taken up with the earlier struggles of their author, but the Indian campaigns are vividly described in the later chapters. He also wrote a valuable statistical account of India. "This contains not only an exact statement of the boundaries, population, resources, revenues and divisions of Hindustan, but a full enumeration of all its useful fruits, trees, birds, beasts and fishes, with such a minute description of their several habitudes and peculiarities as would make no contemptible figure in a modern work of natural history."†

Lodi Sultans, 1451-1526.

Babar the Mogul.

His, life, character and memoirs.

Such was the man who was called upon to found an imperial dynasty in India. He had raided the Punjab as early as 1519 and had in all made three expeditions into north-west India, before he was called in by Ala-ud-din, the claimant of the Delhi throne. In 1524 Babar entered the Punjab, and being assisted by the insurgent governor, Doulat Khan, he seized Lahore and overran the country. Ala-ud-din was still treated by him as a king, but in the following year Babar, having meanwhile returned to Kabul to seek reinforcements, threw off the mask. Leaving Kabul in the autumn of 1525, he resolved to seize the crown of Delhi for himself. Doulat Khan and his Afghans now turned against him, but were dispersed at little cost, and the conqueror proceeded across the Doab towards the goal of every Indian con-

His invasions of India, 1519-1524.

Final invasion and capture of Delhi, 1525-6.

* Mogul, or better Moghal, is the Arabic spelling of 'Mongol,' and is the conventional appellation of the Babarids—the dynasty founded by Babar in India. As a matter of fact, the family were of Turkish as well as Mongol race.

† See p. 8 above.

* Elliot, Vol IV, p 219.

† Ibid, p. 220.

queror. The battle which decided the fate of an empire was fought in the historic plain of Panipat and is graphically described by the victor himself.* Sultan Ibrahim Lodi is said to have mustered 100,000 men and 100 elephants. But Babar was a master in the art of war. He posted his forces most carefully, improving the natural position by artificial defences, and protecting his front by the cannon which his Turks—the best artillery men of the middle ages—could be trusted to make full use of. A furious attack on the enemy's centre supported by the flank attacks of his Mogul cavalry wedged the Afghan forces together in a confused mass, where fighting was impracticable. Ibrahim was killed, his army broke and fled, and Babar was master of the field. He describes Ibrahim as "a young man of no experience, who was negligent in all his movements, marched without order, retired or halted without plan, and engaged in battle without foresight." Agra and Delhi were at once occupied, and the immense spoil of the treasuries fell into the conqueror's hands. The generosity of Babar bound his followers to him more closely. But he was not yet master of Hindustan. The people were hostile, a brother of Ibrahim was in the field, and the Rajputs were arming. The excessive heat, and the lack of grain, caused a murmuring amongst the troops. But Babar, like Cæsar when threatened with mutiny, by a few timely words put the murmurers to shame. Then at last his clemency brought over many of the enemies to his side. He established his hold over the plains none too soon. A vast confederacy of Rajputs had now to be met. Animated by a strong national spirit, they were led by the formidable Rana Sanga of Chitor, the terror of whose name inspired Babar's soldiers with an almost panic fear. "There was not a single person who uttered a manly word, nor an individual who uttered a manly opinion." At this crisis Babar, feeling that some act of repentance was called for, renounced wine—he had ever been a great drinker—and broke his drinking cups of gold and silver, the fragments of which were distributed to the poor. Next, he called his officers together and addressed them: "Noblemen and soldiers! Every man that comes into this world is subject to dissolution. How much better it is to die with honour than to live with infamy? Let us, then, with one accord, swear on God's holy word, that none of us will even think of turning his face from this warfare, nor desert from the battle and slaughter that ensues, till his soul is separated from his body." All thereupon seized the Koran, and swore to this effect. The army, its confidence restored, advanced from Sikri (near Agra) until the hosts confronted each other at Kanwaha. An irresistible Rajput charge nearly broke down the disciplined defence, but a flanking Mogul movement combined with an advance of the artillery and household troops brought about a repetition of Panipat. The Rajputs were pressed into a disordered crowd, until the chivalry of India broke and fled in every direction. Kanwaha shattered the Hindu confederacy as Panipat overthrew the Mohammedan Afghans. There was no more trouble with the Rajputs. But the Afghans had seized the occasion of Babar's pre-occupation to resume the offensive in the neighbourhood of Kanouj. He skilfully crossed the Ganges in the teeth of a hostile force, broke and dispersed the Afghan army, and returned to enjoy a little well-earned repose at Agra. But it was not for long. Mahmoud Lodi, the brother of the ill-fated Ibrahim, collected a vast army with the hope of an Afghan restoration. Jaunpur (Oudh) and Behar declared for him. When, however, Babar led out his army early in 1529, the forces of the Afghans melted away. Behar was easily overrun and Mahmoud sought protection in Bengal. A hostile army massed itself upon the frontiers of that province, and there could be no peace until the rebels were completely shattered. So Babar forced the passage of the Gogra in the teeth of the Bengalis. "The movement was brilliantly carried out in the face of a determined resistance. Attacked in front and rear and flank, the enemy broke and fled. Good generalship had once more guided valour to victory. The result was the collapse of the Afghan rebellion, and the conclusion of a treaty of peace with Bengal. In three battles Babar had reduced northern India to submission."* The rest of Babar's all too short life—a year and a half—was mainly devoted to administration. But no new principles of administration were yet evolved. The old fief system was retained, and that spelt anarchy as soon as ever a weak emperor should mount the throne. It was reserved for Akbar to consolidate on a new and lasting basis the empire his grandfather had conquered by the sword. Babar died in his palace at Agra in December 1530, worn out with the exertions of a career adventurous beyond example. He had not spared himself. Even to the end when consumed by fever he evinced extraordinary vigour. He could swim the Ganges in thirty-six strokes; he often rode eighty miles a day. It is interesting to know that he hankered after his mountain home in Afghanistan, a sentiment which, as noticed before, precluded Mahmoud of Ghazni from attempting any permanent conquest of India. "Hindustan," he says "is a country that has few pleasures to recommend it. The people are not handsome. They have no idea of the charms of friendly society, of frankly mixing together, or of familiar intercourse; they have no genius, no comprehension of mind, no politeness of manner, no kindness or fellow-feeling, no ingenuity or mechanical invention in planning or executing their handicraft works, no skill or knowledge in design or architecture; they have no good horses, no good flesh, no grapes or musk-melons, no good fruits, no ice or cold water, no good food or bread in their bazaars, no baths or colleges, no candles, no torches, not a candlestick." But it is to be remembered that he was only acquainted

First battle of Panipat, 1526.

The Rajput Confederacy.

Battle of Kanwaha, 1527.

The Afghans resume the offensive, but are dispersed, 1528.

Final suppression of the Afghans, 1529.

Death of Babar, 1530.

* For full details of the operations before and afterwards, see Erskine's elaborate "*History of Babar and Humayun.*" This work may be regarded as a final authority on the reigns of the first two Mogul Emperors.

* Lane Poole's *Babar* in 'Rulers of India' series.

with a small part of the country, and that that part had been scourged with wars and rebellions for many a year. He finds, however, some compensation in the abundance of gold and silver and in the pleasant climate during the rainy season.

The country ruled over by Babar comprised little more than the Punjab and the modern United Provinces: Bengal, Malwa and Gujerat were independent, nor were the chiefs of Rajputana too much crushed to renew their efforts under a sovereign less strong than Babar. The natural policy of Humayun, that Emperor's successor, was, then, to complete his father's work, just as in an earlier age Altamsh and Balban had completed the conquest of the north begun by Mohammed Ghori and Aybek. But Humayun, though pleasable, affectionate, accomplished and brave, badly lacked character and resolution. He was too light-hearted and forgiving; he lacked the necessary sternness and the power of concentrated effort which his father had possessed. Thus he failed to cope with the forces of disaffection and hostility with which he was surrounded. "There were three ominous clouds on his horizon when he came to the throne." On the north-west was his brother Kamran, who ruled Kabul and the Punjab, and was ready on every occasion to act the traitor. He held the main recruiting ground of the Mogul army, a fact which largely explains the failures of Humayun. On the east were the Afghans in Behar, with a member of the deposed Lodi dynasty at their head. Many Afghans throughout the inherited dominions of Humayun still held fiefs and only awaited their opportunity to join the anti-Mogul movement. On the south was Bahadur Shah, the great Mussalman king of Gujerat,* who had lately annexed Malwa, and was now hard pressing the Rajputs in that neighbourhood. There is little doubt that had Humayun brought the whole of his strength to bear upon each enemy in turn, he must have been successful. But he weakened his chances by vacillation until the grand army left by Babar was depleted by losses and had its confidence destroyed. Contenting himself with a wholly incomplete success against the Afghans in 1531, he turned towards Gujerat, and after he had quietly witnessed the capture of Chitor by Bahadur Shah, and thereby earned the hatred of the Rajputs, he attacked the army of that Sultan. Through the mistaken tactics of the Gujeratis rather than through superior might Humayun overthrew the foe, pursued the Sultan to the extremity of his kingdom, and the whole realm fell into his hands. But the invader made no effort to keep the provinces he had won. The army was allowed to demoralize itself by protracted festivities, and no sooner was the back of Humayun turned to face the Afghan foe than Gujerat and Malwa threw off the Mogul yoke and returned to the allegiance of their lawful sovereign. The Afghans were certainly the more dangerous foe, as a certain Farid of the Sur family who has assumed the name of Sher Khan (or Shah), was organizing with startling ability a powerful anti-Mogul movement in the eastern provinces. Many years before Babar had said to his minister: "Keep an eye on Sher Khan, he is a clever man, and the marks of royalty are visible on his forehead. I have seen many Afghan nobles, greater men than he, but they never made any impression on me; but as soon as I saw this man, it entered into my mind that he ought to be arrested, for I find in him the qualities of greatness and the marks of mightiness."* This great man had now virtually become the ruler of Behar and was occupied in rapidly reducing all Bengal to his sway. Humayun 'the unfortunate,' having wasted a whole year in merry-making at Agra, at last proceeded against this stalwart foe. The easy capture of Chunar fortress (1537) induced false confidence, and whilst Sher Shah shut himself up in the impregnable fort of Rohtas, Humayun marched into Bengal where he frittered away six precious months in sight-seeing and indulgence. Thus he allowed his communications to be cut while Sher Shah extended his authority as far west as Kanouj and the brothers of Humayun were stirring up mutiny in the capital. News of these events at last roused the feckless Emperor from his torpor, but only to be disastrously defeated by his vigilant foe in a great battle near Buxar. It was a surprise attack, and the Mogul army was without difficulty routed, the emperor escaping across the Ganges by the support of a water-skin provided by a friendly *bhisti*. After a year of feeble preparations on the part of Humayun and vigorous action on the part of Sher Shah, the forces gathered for the final conflict opposite the city of Kanouj. Sher Shah with apparent chivalry but real strategy allowed the Moguls to cross to the north of the Ganges. He awaited them in a strongly entrenched position and the general engagement which followed was hardly for a moment doubtful. The Moguls, oppressed by heat and floods, were half-hearted and weary. "Before the enemy had let fly an arrow," says the historian Haidar Mirza, "we were virtually defeated, not a gun was fired, not a man was wounded, friend or foe." A panic flight to the Ganges involved the emperor in imminent danger. He was carried over by an elephant, and surrendered to fate, saying that supernatural beings had been fighting against his soldiers. He fled to Multan and Sindh and disappears from Indian history for fifteen years. But by 1547 he had reconquered Kandahar and Kabul from his brothers and was once more in a position to make a bid for Indian empire when the opportunity should be favourable.

Meanwhile Sher Shah had seized the throne of Delhi and busied himself with the reduction of Hindustan. He appeared to the Afghan Mussalmans of India less of a usurper than the Mogul, and his great talents undoubtedly conceded to him the right

Humayun, 1530-1540 and 1555-1556.

His enemies.

Conquest of Gujerat and Malwa, 1534.

Their loss, 1535.

Sher Shah and the Afghan movement.

Humayun invades Bengal, 1538.

Battle of Buxar, 1539.

Battle of the Ganges, 1540.

Flight of Humayun.

Sher Shah, 1540-1545.

* See p. 9 supra.

* Abbas Khan, *Tarikh-i-Sher Shahi*. Elliot, IV, p. 331.

to reign. The Punjab, which had not been subject to Humayun, was taken from the treacherous brother of the ill-fated monarch: Malwa was conquered, the rajas of Marwar and Mewar were subdued. Whilst superintending the siege of Kalinjar, that impregnable fortress which figures in every Indian war of the period, the Sultan was involved in the explosion of a magazine, and expired before his work of reorganization was complete. Still he had accomplished much. Abbas Khan,* the historian, gives a vigorous account of the matters wherein the Sultan was busied day and night: "When fortune gave into the hands of Sher Shah the bridle of power, and the kingdom of Hind fell under his dominion, he made certain laws, both from his own ideas, and by extracting them from the works of the learned, for securing relief from tyranny, and for the repression of crime and villany; for maintaining the prosperity of his realms, the safety of the highways, and the comfort of merchants and troops." He attended to all business in his own person, and temporal affairs were not unmixed with devotion. Day and night were divided into portions for each separate business, "for," said he, "it behoves the great to be always active." Careful rules were framed for the collection of the revenue, the average share of the government in the crops being fixed at one-third. The land was divided into 116,000 fiscal unions, and assessment was to be annual. Courts of justice were appointed in every place. Four important highways were constructed, one of which fully furnished with inns for travellers and shaded with trees extended from the Jhelam to the Bay of Bengal. Careful regulations were made for the protection of the roads from thieves and highway robbers. The welfare of the cultivator even in time of war and in hostile countries was scrupulously observed, and the Hindu subjects of Sher Shah were free from oppression. Consequently all the parganas, or villages, were "prosperous and tranquil, and there was not one place which was contumacious or desolated; the whole country was settled and happy; corn was cheap, nor during his time was there anywhere scarcity or famine." The chronicler remarks that "in the time of Sher Shah's rule, a decrepit old woman might place a basket full of gold ornaments on her head and go on a journey, and no thief or robber would come near her, for fear of the punishments which Sher Shah inflicted." Fortunately his administrative reforms did not pass away with his death, but many of the so-called original conceptions of Akbar and his ministers were modelled upon them. Hence his efforts have an importance beyond his own life-time, a merit absent from the reforms of his greatest predecessors on the Delhi throne. Another great service he rendered to the country was that he reduced the turbulent Afghans to obedience. No man dared act in opposition to his regulations, and the exactions of the great fief holders were checked by the imperial officials in much the same way as the greed of the Roman provincial governor was reduced to impotence by the supervision of the early Cæsars.

His wise administration.

Revenue and other reforms.

Unusual security of the country.

* Elliot, IV.—409 *sq.*

Under the incompetent rule of his successor the ancient rivalries of the Afghans were revived, and Selim's eight years reign was consumed in intrigues and fruitless quarrels. Then followed a period of greater confusion. The young son of Selim was murdered by his uncle, Adil Shah, but the real power of the State passed into the hands of Hemu, a low caste Hindu, not without abilities. Such a régime was, however, so repugnant to the proud Afghans that pretenders and rebellions arose both in the Central Provinces and in the Punjab. Humayun, who from his kingdom in Afghanistan, had been watching his opportunity, descended into the plains of India and after two engagements once more seated himself upon the throne of Delhi. The dispossessed Sur family gathered together their forces in the East and were fain to follow the guidance of the despised Hemu. While preparations were being made for the final struggle Humayun, pursued now as ever by ill-luck, slipped from the steps of his palace, and died in his forty-ninth year. It was left to his youthful son Akbar to plant the Mogul dynasty firmly in Hindustan.

Selim Shah, 1545-1553.

Adil Shah, 1553-1555.

Humayun's return, 1555.

Death, 1556.

II.—Akbar the Magnificent.

Akbar was now thirteen years of age. Humayun during his wanderings after the overthrow in 1540 had fallen in love with and had married the daughter of a Sayyid, or member of the Prophet's family, and Akbar was born during the retreat across Sindh in 1542. He was without exception the greatest of the Moguls, perhaps the most striking and capable of all the Indian sovereigns up to his time, whether Hindu or Mohammedan. It is to be noticed that the sixteenth century was an age of great sovereigns. Amongst the European contemporaries of Akbar were Elizabeth of England, Ivan the Terrible of Russia, Soliman the Great of Turkey, and Henry IV of France. The sixteenth century was also a period of long reigns. The emperors Charles V, and Phillip II, of Spain each ruled 40 years, Elizabeth 45, Soliman the Great 46, and Ivan the Terrible, 51. In Asia, where long reigns are rarer, Akbar's forty-nine years of rule would make him unique amongst Indian emperors of the first rank, did not his great-grandson Aurangzeb hold the sceptre for an identical period. Asoka, Akbar's great prototype, was regarded as enjoying a very lengthy reign, but he cannot have ruled for more than forty or forty-one years.

Accession of Akbar, 1556.

During his reign of nearly half a century Akbar had his fill of fighting. Noted as an administrator and a broadminded statesman, he was forced to distinguish himself first as a soldier. At the outset of his reign he possessed only the Punjab and Delhi, and he had to struggle even to maintain himself on the throne of Delhi. Twenty years of severe fighting was needed to bring Hindustan into subjection and numerous campaigns ensued during the next twenty years to round off the boundaries of the kingdom. "The reign was

Akbar the true founder of the Mogul Empire.

thus a perpetual series of efforts towards the expansion of an originally small territory." Thus, while Akbar was the true founder and organizer of the empire which Babar had projected, his reign only marked the beginning of the golden age of Mogul rule. At Humayun's death Akbar was engaged with Bairam Khan, his father's faithful companion in exile and a consummate general, in subjugating the Punjab. Bairam was wisely invested with the Regency. Contrary to the despairing advice of the other generals, he refused to retreat to Kabul, and urged his master to make a bid for the empire which Humayun had not lived long enough to consolidate. Sikandar Sur was left for the moment in the west, and the Mogul forces turned to meet Hemu, who meanwhile had with his Afghans seized Agra and Delhi and had proclaimed himself king. The armies met on the field of Panipat where Babar thrity years before had overthrown the Afghan power. The Mogul archers did such execution that the eye of the Hindu leader was pierced, and "the masterless crowd broke up like a herd of stampeded horses." Hemu was captured and despatched by the sword of Bairam. Delhi opened its gates, and Akbar, the main danger having been successfully met, was planted firmly on the throne. Sikandar, to whose standards the beaten Afghan nobles flocked, was tackled in the following year, and after an eight months' siege, surrendered his fortress of Mankot and was allowed to retire under parole to Bengal. These successes were mainly the work of Bairam Khan, but though he was indispensable in a time of warlike crisis, his arbitrary and overbearing character was harmful in the time of peace. He raised up for himself a host of enemies, and above all the powerful foster-mother of Akbar, Maham Anaga, influenced the emperor's mind against him. At last in the year 1560 Akbar, now in his eighteenth year, assumed the reins of Government. Bairam was ordered to take a pilgrimage to Mecca; he revolted, was defeated and magnanimously pardoned, but on the eve of embarkation for Arabia was assassinated by an Afghan whose enmity he had provoked. During the next seven years Akbar was confronted with a number of rebellions raised by his own followers. But his forced marches and his crushing blows overcame all opposition, and by the end of 1566 peace was established throughout the empire, and the emperor was free to embark on schemes of wider domination. But before southern conquests were to be thought of it was necessary to obtain a firm hold of Rajputana. The turbulence of his Mohammedan followers had already stimulated the native statesmanship of Akbar towards a policy of conciliation with the Rajputs. In 1562 Raja Bihari Mal, the lord of Amber, had come to pay his homage to the new sovereign. He was received with great honour, and the new policy of conciliation was inaugurated by the marriage of Akbar to a daughter of the Rajput prince. Previous Sultans had taken Hindu women into their harems, but none had treated them with such marked consideration as Akbar. The Princess of Amber was allowed to retain her own faith, and her relations were given high positions in the imperial army. The Raja of Marwar (Jodhpur) also became a loyal servant of the emperor, but the proud head of the Rajput clans, the Rana of Chitor, held aloof and made no secret of his hostility. Where conciliation was useless, it was necessary to employ force. The storming of Chitor is one of the most picturesque episodes of the reign. This mighty fortress, standing on an isolated crag four hundred feet high, and with almost perpendicular sides, had been a thorn in the flesh of almost every Mohammedan emperor of Delhi for several centuries. It had been taken over and over again, but as constantly recaptured by the resolute Rajpúts of Mewar. The present Rana, a feeble son of the great Sanga, whom Babar had overthrown, retired himself to the Aravalli hills leaving 8,000 troops under the famous Jai Mal in command of Chitor. The resolution of Akbar and the skill of his engineers were at length rewarded. Under cover of the *sabat*, a broad covered way in principle resembling the Roman *testudo*, the besiegers climbed the precipice and overtopped the walls. Sappers undermined the bastions with gunpowder, and a breach was made. Akbar himself picked off with his musket the Hindu leader, and the besiegers penetrated the town. The garrison having, according to the fashion, burned their families and goods in huge bonfires, rushed upon death. Every step was contested and the streets ran blood. The heroism of the defence survives in popular traditions to the present day, and practically all the garrison were annihilated in the deadly struggle. Rantanbhor and Kalinjar, two other famous fortresses, were captured a few months later, but though Rajputana as a whole acknowledged the conqueror's might and clemency, Udai Singh of Mewar never himself submitted. His family alone maintained their pride and independence, and never yielded to what they were pleased to call the indignity of a family alliance with the Mogul emperors of Delhi. This haughty independence, however, was of little profit, and the remaining Rajput princes chose the wiser part, for many of them gained distinction by their loyal services in the wars of Akbar and his successors, while Jehangir, the heir of Akbar, was himself the son of a Rajput princess.

After two years of peace, the anarchy of the Mohammedan kingdom of Gujerat compelled interference. The country was overrun and annexed to the Mogul empire after its two centuries of independence. Akbar's daring brought his life into danger during this campaign, but both his personal deliverance from a difficult position and his ultimate success were largely due to the exertions of the Raja of Amber and his warrior nephew, Man Singh. Gujerat revolted about two years later but never recovered its independence.

The next work of importance was the suppression of the adherents of the fallen Sur dynasty in Bengal. Had these Afghans kept quiet, they might have retained the eastern provinces, but they failed to realize the uselessness of struggling with the Mogul, and were constantly raiding the territory of the Empire. It was

Second Battle of Panipat, 1556.

Bairam's regency.

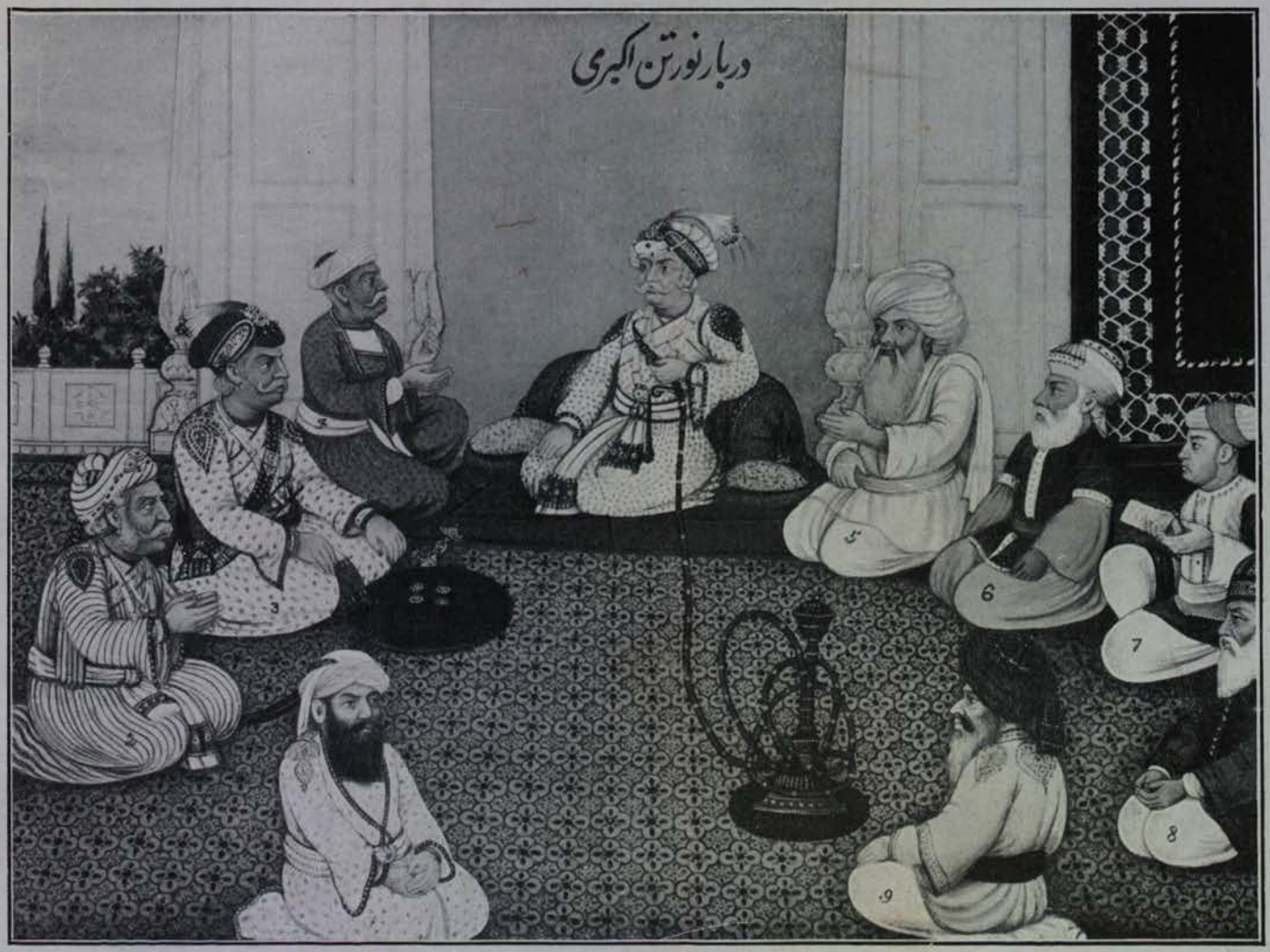
His death, 1560.

Revolts, 1560-1566.

Akbar conciliates the Rajputs.

And captures Chitor, 1568.

Conquest of Gujerat, 1572.



AKBAR'S NAURATNA DARBAR. From Painting in the Victoria Memorial Collection.

1. HAKIM HAMAN. 2. Raja TODA MULL. 3. Raja MAN SINGH. 4. Raja BIRBAL. 5. MOLLA DOPEAZA.
6. FAIZY. 7. ABUL FAZL. 8. MIRZA TANSHEN. 9. Nawab KHAN KHANAN, also known as BAIRAM KHAN.

not until 1575 that Akbar had thoroughly subdued and pacified the north of India. Then it was that he turned his arms against the debauched Afghan king of Bengal, Daud Khan. Akbar conducted the first portion of the war himself and then left Raja Todar Mal, the famous Hindu general and finance minister, to conclude it. Behar, of which only a part had formerly acknowledged Akbar, and Bengal were now annexed to the empire, but repeated revolts arose, for Daud Khan, who had been allowed to retire to Orissa, made fresh efforts to regain the sovereignty. Orissa was added to the empire in 1590, but the east was not thoroughly pacified until 1592, when the last Afghan rebellion was suppressed.

Conquest of Bengal, 1575.

And Orissa, 1590.

During the last twenty years of his reign, Akbar made several further conquests. Kabul, held as fief by a rebellious brother, came directly into Akbar's hands in 1585; the wild mountain tribes of the north-west were, not without misadventure, quieted in 1586; Kashmir, where anarchy reigned, was annexed in 1587; Sindh and Kandahar were incorporated in the empire in 1592 and 1594 respectively. Now that Hindustan was completely subject to Delhi, Akbar could begin to think of subjugating the Deccan. After the kingdom of Vijayanagar had fallen (1565), the Moslem Sultans amongst whom the Bahmani dominions were parcelled out resumed their strife, and the king of Ahmednagar had at length by the conquest of Berar in 1572 become the most powerful chief south of the Vindhyas. But faction and intr gue brought a deserved punishment. In 1595 there were no less than four parties and four rival claimants of the throne. As so often happens, party selfishness obliterated all patriotic sentiments. Akbar was invited to intercede in the dynastic quarrel. But when the Mogul army arrived, the danger of the intervention was at length realized, and the rivals combined to resist the invaders. Chand Sultana, a most distinguished and intrepid princess, was appointed regent, and herself directed the defence of the city with such success that the Mogul army withdrew on condition that Berar should be ceded to the Empire (1596). Further quarrels then ensued in the Deccan, the Sultana was murdered and a fresh intervention of the Moguls under Akbar in person took place. But he only succeeded in permanently annexing the small kingdom of Khandesh and a part of Berar: the final overthrow of the Moslem kingdoms of the Deccan was reserved for his descendants during the 17th century.

Fresh conquests in the North-West.

Beginning of Mogul conquests in the Deccan, 1595-1600.

The empire of Akbar was hardly larger than that governed two centuries before by the house of Khilji and the early Tughlaks. But it was incomparably more solid and more enduring. The units were more completely conquered, and more firmly knit together: elements, like the Afghan fief-holders, making for disunion and dismemberment, were reduced to impotence, and the whole was governed in its own interests according to sane and liberal principles. Akbar was the first of the Moslem emperors to place the Hindus on an equality with their conquerors, and to take them into partnership on a large scale. He married two princesses of Rajput blood, and one, the Princess of Amber, became the mother of Jehangir. Hindus were among his favourite courtiers and greatest administrators. Man Singh was one of his most successful generals. The revenue reforms of Akbar were chiefly due to the wisdom and sagacity of Raja Todar Mal, who adopted and improved upon the principles enunciated by Sher Shah. Absolute toleration was conceded to all religions, and the persecuting tendencies of the orthodox Moslems were rigorously repressed. Two taxes which fell heavily upon the Hindu population were abolished: the duty on pilgrimages, which brought in millions of rupees annually and which seriously interfered with what the Hindu regarded as a pious duty, and the *jiziya* or capitation tax imposed by Mohammedan sovereigns on those of another faith. "There was no tax which caused so much bitterness of feeling on the part of those who had to pay it: nor one which gave so much opportunity to the display and exercise of human tyranny. The reason why the sovereigns before Akbar failed entirely to gain the sympathies of the children of the soil, might be gathered from the history of the proceedings connected with this tax alone."* The *jiziya* was not only a tax of vicious character, but was especially liable to abuse in the collection. It was the revival by Aurangzeb of this oppressive measure which largely accounts for his ultimate failure. While endeavouring to avoid unnecessary interference with the religious opinions of his subjects, Akbar did not scruple to check abuses which seriously restricted their well-being. Thus he ordained that *sati* must be a purely voluntary sacrifice; he permitted widow re-marriage, and forbade marriage before the age of puberty. These abuses had, as we have seen, only crept into the Hindu system gradually in Post-Vedic times, and the reforms of Akbar in this connection anticipated the intelligent efforts of the most enlightened Hindus themselves at the present day.

Principles of Akbar's administration.

Enlightened policy towards Hindus.

The narrowness of the more bigoted and orthodox Mohammedans provoked his indignation no less than the abuses of orthodox Hinduism. The liberal tendencies of the emperor, formed by constant meditation, and encouraged by Faizi and Abul Fazl, the most enlightened of his courtiers, resulted in an attempt to found a universal religion, composed from a variety of different sources. Heated discussions took place in the royal palace at Fatehpur Sikri, and learned men of all religions were gathered together to exchange their views before the emperor. "To Akbar's open eyes there was truth in all faiths, but no one creed could hold the master-key of the infinite....He listened eagerly to the words of the Christian Fathers, to the Vedanta philosophy of ascetic Yogis: he had Sanskrit classics translated for him, and ordered a translation of the Gospels: he must have known the Buddhist doctrine and the profound metaphysics of India.....Islam was too bounded for his expanding soul. The outward symbols went: the Moslem

Akbar's comprehensive religion.

* *Akbar*, 'Rulers of India' Series. Col. Malleson.

shibboleth vanished from the coinage, and the ambiguous formula, 'Allahu Akbar,' 'God is Great' (or as detractors construed it, 'Akbar is God'), took its place. .....He found that the rigid Moslems of the Court were always casting in his teeth some absolute authority, a book, a tradition, a decision of a canonical divine, and like Henry VIII he resolved to cut the ground from under them: he would himself be the head of the church, and there should be no pope in India but Akbar."* In accordance with this decision a decree was promulgated to the effect that on all matters of faith the emperor's decision should be binding on all Moslems in India. Opposition being crushed, the pantheism of 'the elect,' Faizi, Abul Fazl and others, became the court religion under the name of the *Din-i-Ilahi*, or 'divine faith.' It was essentially an eclectic pantheism, and the sun-worship of the Parsis was one of its most notable factors. The Mohammedans remained on the whole hostile, Akbar's heterodoxy formed the pretext of those family dissensions which embittered his last days, and the triumph of the pantheists was cut short by his death. But such an attempt at Catholic comprehension in an age when any real toleration was unknown alike in Asia and Europe is not the least of Akbar's titles to fame.

The 'Divine Faith.'

The administrative reforms of the reign demand separate treatment. Great efforts were made to purify justice, and Akbar insisted that the religious element was not to enter into the question before the magistrate or judge. In the eye of the law all men whether Mohammedans or Hindus, Shiahs or Sunnis, were to be treated alike. After the pacification of the north a census was ordered "of all the inhabitants, specifying their names and occupations. This regulation was the means of establishing tranquility and of providing security for the broad expanse of Hindustan." †

Justice.

Census.

Abul Fazl in his great *Ain-i-Akbari*, which forms the third volume of his *Akbar-nama*, gives a complete account of the land-revenue system inaugurated by Todar Mal. It is well summarized by Keene in his "History of India." "There was to be an accurate record of each landholder's rights and liabilities. Easy means of complaint against undue exactions were provided, with due provision for the punishment of offenders. The number of petty officials was reduced by one-half. Advances of money and seed were available; arrears were remitted when remission was required. Collectors were called upon for yearly reports; and monthly returns were to be submitted to the exchequer, special narratives being required in case of special calamities, hail, flood or drought. The collections were made four times in the year; and care had to be taken that there should be no balances outstanding at the end of that period. It is hardly too much to say that the scheme contained the germs of the successful revenue-systems of modern India." Again, "at the same time attention was paid to the question of currency-reform. Local coinages were abolished, and imperial mints established at great centres, previous coins being called in. All establishments were paid in cash, the wasteful method of *jagirs* and territorial assignments being discontinued. Lastly, poor houses were opened for the relief of indigent wayfarers, and the emperor used to visit them in person."* The revenue survey seems to have been made every ten years, and by 1605 the revenue realized from the land amounted to nearly twenty million pounds. One-third of the gross produce was usually demanded by the Government. India north of the Vindhyas was divided into twelve subahs or provinces, each governed by a viceroy, who held office during good behaviour.

Revenue and currency reforms.

The versatility of Akbar was amazing. His great genius not merely asserted itself in statesmanship, in theology and war, but shone conspicuous in many a minor art. He had a taste for mechanical contrivance; invented a travelling carriage, a new method of making gun-barrels, and a machine for cleaning guns. His marksmanship was unerring. He distinguished himself in the chase and was zealous in hawking. He was a fine polo player, and by the use of fire-balls even enjoyed the sport at night. He frequently indulged in cards, and made some alterations in the rules for playing. He was exceedingly musical, and "possessed such a knowledge of the science of music as trained musicians do not possess." Finally, he was a great builder and showed fine taste in architecture, sculpture and painting. He built the majestic fort at Agra, but the city and palaces of Fatehpur Sikri are his greatest architectural monument. Here, twenty-two miles from Agra, he created a capital for himself, and crowned the slopes with a series of beautiful buildings, which still, in semi-ruin, attest the greatness of their author. In this Oriental Versailles the great ruler enjoyed to the full his love of meditation and discussion. The place is full of his memories: there stand the houses of his wives and of his ministers, the audience hall with its pillared throne and galleries, the court-yard where the emperor played living chess with slave-girls, and the simple bed-room where Akbar took his afternoon repose. At night he slept but little: the hours of darkness and of peace were devoted to discussion and meditation: the morning to work and sport, the afternoon alone to rest. Akbar ate as little as he slept. While Abul Fazl consumed of food and drink some twenty seers a day, his master was content with a single meal. For months at a time he abstained from meat, but he was much addicted to fruit, and made a careful study of its cultivation. Simple and austere in his personal habits, Akbar knew well when and how to be magnificent. The pomp and circumstance of his progresses and festivals impressed the eye of the beholder. He had 5,000 elephants, 12,000 riding horses, and a camp-equipage of the most splendid character. On the great days of ceremonials "Akbar seated himself on his throne, sparkling with diamonds, and surrounded by his chiefest nobles, all magnificently attired. Then there passed before him in review the

Akbar's versatility.

Fatehpur Sikri and Akbar's habits of life.

His magnificence.

* *India under Mohammedan Rule.* Lane Poole, Ch. XI.

† Abul Fazl, *Akbar-nama*, Elliot VI, 61.

* *History of India.* Keene, I, 139.

GREAT GATEWAY OF THE MOSQUE AT FATEHPORE SIKRI BUILT BY AKBAR.

elephants with their head and breast-plates adorned with rubies and other stones, the horses splendidly caparisoned, the rhinoceroses, the lions, the tigers, the panthers, the hunting-leopards, the hounds, the hawks, the procession concluding with the splendidly attired cavalry."* Jehangir's portrait of his father in later life deserves mention. "Though he was illiterate, yet from constantly conversing with learned and clever persons, his language was so polished, that no one could discover from his conversation that he was entirely uneducated. † He understood even the elegancies of poetry and prose so well, that it is impossible to conceive any one more proficient." The following is a description of his person: "He was of middling stature, but with a tendency to be tall, of wheat-colour complexion, rather inclining to dark than fair, black eyes and eyebrows, stout body, open forehead and chest, long arms and hands. There was a fleshy wart, about the size of a small pea, on the left side of his nose, which appeared exceedingly beautiful.....He had a very loud voice, and a very elegant and pleasant way of speech. His manners and habits were quite different from those of other persons, and his visage was full of godly dignity." ‡ We may add that Akbar earned the repugnance of orthodox Moslems by shaving the beard, an example which the court were expected to follow. It is interesting to remember that Peter the Great of Russia provoked considerable opposition by a similar reform.

Personal appearance.

This sketch cannot be complete without some notice of the more important among Akbar's ministers and favourites. Beyond comparison the brothers Faizi and Abul Fazl left their stamp upon the emperor. Faizi the poet, Abul Fazl the historian, statistician and administrator, were liberals of the liberals, and encouraged Akbar in his religious speculations, while themselves earning the distrust and hatred of orthodox Islam. Faizi was one of the greatest Persian poets that India has produced. He it was that by means of Persian translations introduced Akbar to the study of Hindu poetry and philosophy. Abul Fazl was prime minister and was the author of many works of repute. The *Akbar nama* with its supplement, the *Ain-i-Akbari*, was by far his greatest production. The style is rhetorical and often abstruse, and the book has been unduly condemned on the score of flattery. But his praise, while it was generally deserved, is infinitely less nauseous and exaggerated than that of most Indian historians; moreover, it sprang from genuine adoration. He was treacherously murdered in 1602 at the instigation of Selim (Jehangir) who was jealous of his influence, and was probably urged to the deed by the orthodox party in the state. Akbar never recovered from the shock of this great sorrow, particularly as Faizi had already passed away (1595).

Akbar's ministers and favourites.

Faizi and Abul Fazl.

No subject served Akbar so zealously and with such important consequences as the Hindu financier, Raja Todar Mal. "Careful to keep himself from selfish ambition," writes Abul Fazl, "he devoted himself to the service of the state, and earned everlasting fame." As his reforms (*supra*, p. 18) touched the people so deeply, it is not surprising that his name was long cherished in the popular memory. British administrators cannot afford to slight the name of the man whose principles of land revenue they have so largely followed.

Raja Todar Mal.

Another Hindu favourite was Raja Birbal, whose house at Fatehpur is still one of the chief attractions to the tourist. He was a Brahman, a poet, and a musician. He was noted for his wit and his liberality, but was no feeble general in the field. Birbal was one of the elect who professed Akbar's "Divine Faith."

Raja Birbal.

The Rajputs Bhagwan Das, Raja of Amber, and his adopted son Man Singh, were, as we have seen, related by marriage to the emperor and did him good service in the field.

Amongst the orthodox Moslems at Akbar's Court two men have gained immortal fame by their works. Nizam-ud-din Ahmed wrote one of the most celebrated histories of India, extending from the time of the Ghaznavides to the 38th year of Akbar's reign, and Abdul Kadr Badauni wrote an abridgment of the same work. Badauni figures more largely in the court history of the reign. He lived in apparent amity with the philosophic brothers, but being a zealous Moslem, he detested them and the emperor in secret. His history was not published until the following reign, and it is in places a valuable corrective to the eulogies of Abul Fazl.*

Ahmed and Badauni.

III.—Jehangir and Shah Jahan.

Akbar's last years were soured by the rebellion of his favourite son Selim, who succeeded his father on the throne in 1605 under the title of Jehangir, 'World Grasper.' "Born under a superstitious spell, named after a wonder-working saint, petted and spoilt, the boy grew up wilful, indolent, and self-indulgent, too lazy and indifferent to be either actively good or powerfully evil." He was possessed of a violent and arbitrary temper, and was a notorious and habitual drunkard, though he could control himself when necessary. "His image may be seen on his coins, wine-cup in hand, with unblushing effrontery; it is of a piece with the astonishingly simple candour of his own memoirs." As he grew older, he toned down somewhat, partly, he says, from a conviction that he was injuring his health, but chiefly, no doubt, under the influence of his beautiful and talented wife Nur Jehan, the 'Light of the World.' Besides the Memoirs of the emperor and the writings of contemporary Indian historians we are fortunate in possessing the accounts of several Europeans who visited India and the court of the great Mogul. Up to the end of the sixteenth century Europe had little first-hand knowledge of India. The Portuguese had settled on the

Jehangir, 1605-1627.

Contemporary records.

* Malleson's *Akbar*, 'Rulers of India' Series.

† But he was only such in the sense of having been deprived of a fitting education in youth: his warlike pre-occupations had left him little time for mental culture. After his accession, he educated himself persistently, possessed a considerable library and read largely. This we learn from Abul Fazl in his *Ain-i-Akbari*.

‡ Jehangir's *Memoirs*. Elliot, VI, 290.

* Elliot, Vol, V, contains translations of both these histories.

coast at various places from about 1500 onwards, but they seldom penetrated inland, and no writer of note has described his Indian travels and experiences during the 16th century. When at last Englishmen and Frenchmen visited Delhi and Agra, the stories they told of the gorgeous Indian court took the western world by storm, and people began to realize that a splendid and striking civilization existed in the east, as remarkable and as worthy of study as any that contemporary Europe could show. After about a century of settlements the Portuguese began to decline. The prospects of extended empire which such heroes as Albuquerque and Almeida may have encouraged were destined to remain unrealized. Goa was indeed the most splendid city in the East, but the Portuguese contented themselves with fortified coast stations and a commerce which brought them unrivalled wealth. Portugal had succeeded to the commercial monopoly of the Arabs in the Indian seas, and this monopoly depended entirely upon the command of the seas. But the Portuguese began to degenerate under the moist heat of the Malabar Coast, while they stirred up the hostility of the natives by their greed and their intolerant religious policy.

European travellers.

The Portuguese commercial supremacy overthrown by the Dutch and English.

The annexation of Portugal by Spain in 1580 was the death-blow to Portuguese enterprise in the Indies, and it was swiftly followed by the appearance of European rivals in the eastern seas. The Dutch appeared in 1597, but no sooner had they undermined the Portuguese commercial monopoly than the English, whose first East India Company had received its charter in 1600, came to claim their share. An English factory was founded at Surat, and a couple of naval victories early in the century transferred the command of the seas from Portugal to England. The claim now for the first time brought forward by Englishmen to a right of trade and settlement in India required the approval of the emperor at Delhi. The ambassadors of King James therefore visited Jehangir: William Hawkins in 1609, and Sir Thomas Roe in 1615. Hawkins, a blunt sea-captain, "was the first Englishman ever received by the Emperor of Hindustan as the official representative of the King of England, and he obtained from the Great Mogul the first distinct acknowledgment of the rights of British commerce in India." Hawkins suffered much maltreatment at the hands of the Portuguese, who claimed that "these seas belonged to the King of Portugal," and had his goods pillaged by the Mohammedan governor of Gujerat.

William Hawkins at Agra, 1609-1611.

Having arrived at the royal court, then being held at Agra, Hawkins was heartily welcomed by the emperor. The two had long conversations together in Turkish, and drank as boon-companions in the evening. For more than two years he maintained a very intimate position at the court, but the intrigues of the Portuguese were so persistent that he obtained from Jehangir little more than a general recognition of the English trading rights. His powers of observation were not deeply penetrative, but his narrative is not without its value.* The revenue he estimates at the absurdly high figure of fifty millions sterling, and the daily expenses of the court at £8,000. The court jewels and the military establishment, the nobility, and the emperor's domestic life are all described with considerable minuteness. Jehangir spent a great proportion of the day and night in sleeping and drinking. Owing to the imbibing of wine and the eating of opium, the emperor was not able to feed himself at supper, "but it is thrust into his mouth by others."

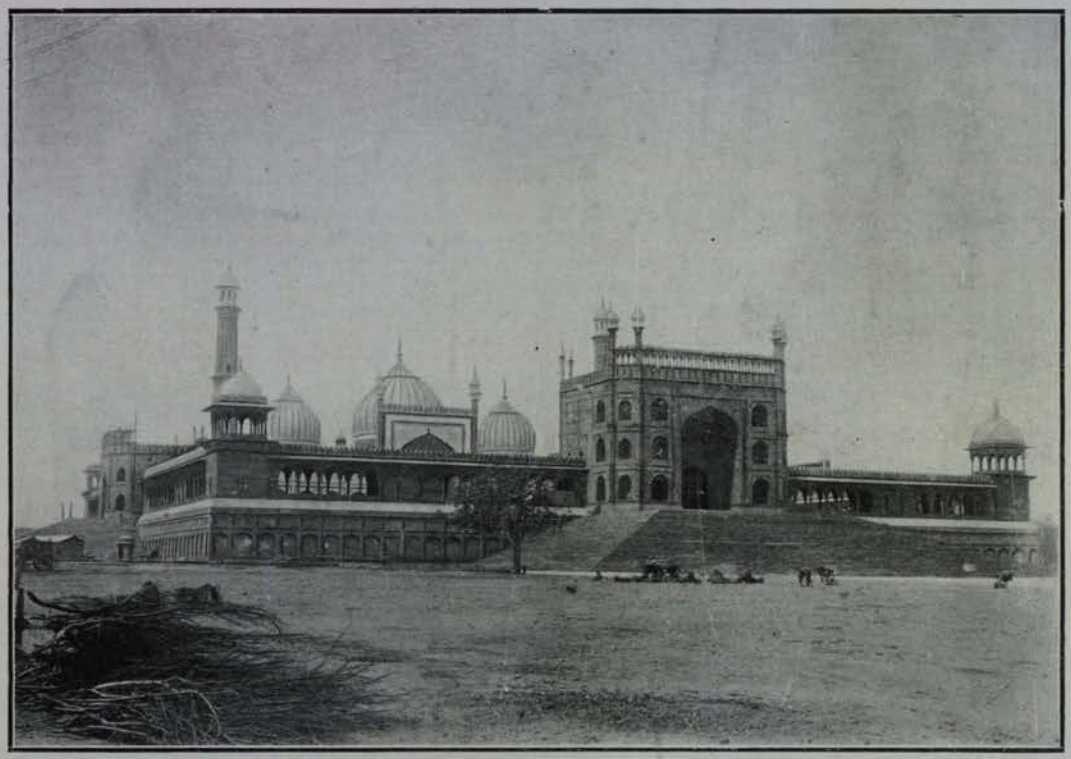
Sir Thomas Roe came in 1615 to complete Hawkins' work. An aristocrat of the best Elizabethan model, he did much to inspire respect for his countrymen in the hearts of the emperor and his servants. When he arrived, the influence of the Portuguese at court had almost succeeded in driving the English out of Surat; Englishmen were flouted and humiliated every day, and it was only Roe's own spirited demeanour that protected him from insult. Roe's embassy soon changed all this. "Despite of the opposition of the Prince Shahjehan, of the intrigues of the empress, the prime minister and the Jesuits—mostly Portuguese—Roe not merely asserted his countrymen's rights to fair treatment, but won a series of important diplomatic victories." All bribes and extortions previously taken from his countrymen were recovered, and the English trade at Surat was sanctioned in firmans issued to the local authorities. Jehangir conceded privileges equal to those possessed by other foreigners, and the English factory at Surat was established on a stable basis. As the Portuguese monopoly had already been broken through, the Dutch remained the only serious European rivals in the Eastern trade. But, as Roe remarks, they frittered away their strength in seeking 'plantations' by the sword. "Lett this bee received as a rule that if you will profit, seeke it at sea, and in quiett trade, for without controversy it is an error to affect garrisons and land wars in India." Roe's journal† gives a picture of contemporary India of exceptional value and interest, and as a record of court life it is an admirable complement to the narrative of Hawkins. Roe had an excellent talent for observation and a natural gift for literary expression. We have a graphic description of the royal durbar, and the magnificent jewellery of the court; but the vices of the emperor made this show seem somewhat hollow. The following picture is typical: "The good king fell to dispute of the Lawes of Moses, Jesus and Mahomet, and in drinke was so kinde, that he turned to me and said: 'I am a king, you shall be welcome.' Christians, Moors, Jewes, he medled not with their faith; they came all in love, and he would protect them from wrong; they lived under his safety, and none should oppresse them; and this often repeated, but in extreame drunkennesse, he fell to weeping and to divers passions, and so kept us till midnight." Several other Europeans have left accounts of their Indian experiences in this reign, but none cast such light upon the court, the per-

Sir Thomas Roe at Agra, 1615-1618.

English trade now settled on a firm foundation.

* *The Hawkins Voyages, Part III* (Hakluyt Society), Sir Clements Markham.

† *Sir Thomas Roe's Journal and Letters*, Foster (Hakluyt Society).



FRONT OR EAST VIEW OF THE JAMA MASJID AT DELHI.
Showing the Royal Gateway. Built by the Emperor Shah Jahan, 1644-1658.

VIEW OF FATEHPUR SIKRI FROM THE HIRAN MINAR.
Built by the Emperor Akbar, 1569-1574.

sonality of the emperor, and the methods of government as the journals of Hawkins and Sir Thomas Roe.

Character of Jehangir.

Jehangir was certainly a strong contrast to his father. But he was shrewd enough to maintain his father's fundamental principle of toleration and the conciliation of Hindus. At the same time, while really less devout than Akbar, he professed orthodoxy and destroyed all traces of the pantheism which had flourished at his father's court. The great thing he lacked was the strong hand, the masterfulness of Akbar. His governors and officials became corrupt as of yore, robbery and brigandage reappeared even in the civilized provinces of the empire. Granted the authenticity of his *Memoirs*, he seems to have possessed plenty of ability; it was a moral weakness from which he suffered He was fond of jewels and a connoisseur of pictures and statues. He was a mighty hunter like all his ancestors, and like Babar, an intelligent lover and observer of nature, both animate and inanimate. Some of the Twelve Institutes, included in the *Memoirs*, are worthy of notice.

His Government.

They display the best intentions and a knowledge of the principles of good government, but at the same time they are modelled on the legislation of his predecessors, and they were not persistently carried into practice. Thus he abolishes all unlawful exactions, but there is ample testimony to prove that the order was not observed. He asserts the indefeasible rights of private property, and forbids the customary right of search. Both orders were contravened by his officers. He distinguished himself, as Ala-ud-din had done before, by a temperance enactment, but he himself was notorious for inebriety. He forbade brutal mutilations, but a catalogue of his own cruel deeds could be cited against him.*

Nur Jehan.

Doubtless things would have been worse but for the influence of the gifted empress, Nur Jahan. Her life is a veritable oriental romance, and the ascendancy she gained at the court was remarkable and enduring. She weaned the emperor from excessive drunkenness to moderate drinking, but the intrigues and rebellions which clouded the end of the reign were largely the result of her unscrupulous favouritism. Of these rebellions and of the wars which took place under Jehangir not much need be said. Soon after the accession the Emperor's eldest son, Prince Khusru, rebelled, and on being defeated was condemned to a life-long captivity. The war opened by Akbar in the Deccan continued with intermissions. The great Malik Amber, an Abyssinian general in the service of the ruler of Ahmednagar, resisted all the emperor's expeditions, and although driven back, he was never altogether subdued. The southern boundaries of the empire thus remained almost as they were at the death of Akbar. Malik Amber is famous for his foundation of Aurangabad, and for his introduction of a new revenue system into the Deccan. He was the last great figure in the declining state of Ahmednagar.

Rebellion of Khusru, 1606.

Wars in the Deccan.

* See especially appendix on Jehangir's *Institutes*, Elliot, Vol. VI.

Another war took place with the Rana of Udaipur but it was terminated by the military genius of the future Shah Jahan. The Rana received back his principality and no longer remained a cause of trouble to the Imperial Government.

Submission of the Rana of Udaipur, 1614.

It has been said that Nur Jahan was largely responsible for the troubles which darkened the end of an otherwise fairly peaceful reign. The elder son of Jehangir, Prince Khusru, was made away with probably at his brother Khurram's instigation in 1621. Prince Khurram, who received the title from his father of Shah Jahan, 'Lord of the World,' thus became the obvious heir to the empire, for which his talents as well as his seniority marked him out. But he was too grave and reserved for his frank outspoken father, and he somehow or other incurred the displeasure of his all-powerful mother. Meanwhile he was in favour with the prime minister Asaf Khan, a brother of Nur Jahan. Shah Jahan, on discovering the intrigues which aimed at depriving him of his heritage, raised the standard of rebellion. He was, however, reduced to submission by Mahabat Khan, a general who had fought under Akbar, and the most eminent man in the empire. But Mahabat and his army looked with no favourable eye on the sinister designs of the empress. Failing to win him over, Nur Jahan resolved on his overthrow. But the general cleverly anticipated his fate by a bold seizure of the emperor's person, when Jehangir was on the way to put down a rising in Kabul (1626). The empress thereupon marshalled the imperial guard and rode fully armed on an elephant at the head of her troops to release her lord. Failing, however, in open attack, she boldly entered the camp, shared her husband's captivity and at length effected his release by stratagem (1627). Mahabat Khan fled to the Deccan and joined Shah Jahan who was once more in revolt. But the release of the emperor came too late. Before he was in a position to suppress the growing rebellion, he became violently ill from asthma and died in October 1627, being then in the sixtieth year of his age.

Rebellion of Shah Jahan, 1623-1625.

Mahabat Khan takes Jehangir prisoner, 1626.

Death of Jehangir, 1627.

There was little use in opposing Shah Jahan who had Mahabat and the whole army on his side. After a stop-gap had been provided by Asaf Khan in the person of a son of the dead Khusru—a measure obviously taken to foil the attempts of another claimant who was in the field—Shah Jahan appeared at Agra and was proclaimed emperor. His intriguing mother retired into seclusion and lived outside the course of history until her death nearly twenty years later.

Shah Jahan, 1628-1658.

The new emperor was the most popular of the Moguls, and the most magnificent. His ability had been tested during his father's lifetime, but the haughty gravity and reserve which had gained him many enemies at court seem to have been entirely cast off when he assumed the crown. Shah Jahan proved to be frank and accessible, kindly and benevolent. Himself the son of a Hindu mother, as Jehangir had been before him,

Character and government.

he carried on the tolerant traditions of his predecessors, both from policy and because he had no very strong religious convictions himself. He was free from the cruelty and drunkenness which tarnished the reputation of Jehangir, but instead he abandoned himself to the genial pleasures of the harem, and remained a voluptuary even to the end of his days. He was extravagant and avaricious to a fault, but the management of the finances was in such able hands—the emperor was fortunate in his counsellors—that so far from there being a deficit, an enormous surplus was left in the treasury at the end of the reign. Despite the millions lavished by Shah Jahan on building operations, jewellery and display, we hear of no unusual extortion. On the other hand, the European travellers are at one in lauding the wealth of the country. The soil produced abundantly, and manufactures flourished in all parts. Bengal was a great cotton-producing centre, and Dacca was the magnificent emporium of the Bengal commerce. Silk and leather were manufactured in Sindh. Broach was a great weaving centre; the magnificence and wealth of Ahmedabad, the capital of Gujerat, greatly impressed the German traveller, Mandelslo. Cambay was another wealthy town: it was larger than Surat, and carried on an extensive trade. Indeed, the wealth of Cambay was attested fifty years before by the Dutch traveller Linschoten, who visited the Indies to report on the possibility of founding a Dutch East India Company. Mandelslo has provided us with a graphic picture of Agra, the early capital of Shah Jahan. Some of the streets were vaulted like our modern arcades. There were seventy great mosques and eight hundred public baths. Every nation which traded with the east had an establishment at Agra, the English amongst them. Christians were tolerated there, and the Jesuits had a fine church of their own. The imperial palace now being reared by Shah Jahan within the fort of Akbar was resplendent with jewelled mosaics, and the emperor was credited with having a stored treasure equivalent to 300 millions of our money. Manrique, another traveller, says that Agra in 1640 stretched for six miles along the Jumna, and contained a population of 600,000. The sumptuousness of the banquets greatly impressed the Italian, and it is noteworthy that ladies attended unveiled. The beautiful Diwan-i-Khas and the Pearl Mosque built by Shah Jahan are amongst the glories of Agra which still attract tourists from all over the world. But more glorious still is the Taj Mahal, the world-famous mausoleum of the Emperor's beloved wife, Mumtaz-i-Mahal, 'The Elect of the Palace.'* Tavernier, a French traveller, who spent a great part of his life in the east, asserts that 20,000 workmen were employed for nearly twenty years in the construction of the Taj. The labour and time devoted to this masterpiece in marble suggests comparison with the greatest undertaking of the ancient world, the mammoth pyramid of Kheops at Gizeh. But the cost of the Taj must have been incomparably greater, while it is not merely a great engineering enterprise but a supreme work of art. About 1638 the emperor caused a new capital to be erected at Delh along the Jumna, under the name of Shahjahanabad. When completed ten years later, it was the most magnificient royal residence in the world. The fort is mightier and more extensive than the fort at Agra: similarly the palace apartments were far grander. In the Hall of Public Audience stood the famous peacock throne, which cost the Emperor £6,000,000. It was carried away to Persia by the conqueror Nadir Shah in the 18th century and is now at Teheran. The Jama Masjid at Delhi, the greatest mosque in India, was another of the foundations of this imperial builder. Shah Jahan spent the earlier years of his reign at Agra, but after the completion of the new city at Delhi he mostly resided there, taking, however, summer trips to the beautiful vale of Kashmir "with a set of travelling tents so numerous and complete that they took two months to pitch at the successive stages of the royal route."

Wealth of India.

The emperor a great builder.

New Delhi.

It is obvious that the wealth of the court reflects the wealth of the country. That many provinces were prosperous we have seen from the accounts of European travellers, whose impartiality it is reasonable to assume. That the national wealth had increased during the last fifty years is natural, seeing that the greater part of the empire had been fairly free from war since the days of Akbar. The revenue system inaugurated in his day had had time to bear fruit, and Shah Jahan received an average annual land revenue of twenty crores of rupees (£20,000,000), about twice as much as was paid to Akbar. In the absence of testimony it is unfair to assume that a higher rate was exacted: probably more land was cultivated, the administrative machine had with time become more perfect, and above all the area of the empire had been enlarged by the middle of the seventeenth century. Much of the emperor's treasure was derived from the costly presents given by his noblemen, and it is constantly asserted by contemporaries that the estates of the jagirs escheated to the crown on the death of their holders. This picture of wealth and fair government where the emperor "reigned not so much as a king over his subjects, but rather as a father over his family and children," was however undoubtedly stained by several of the vices incidental to Oriental despotism. While Shah Jahan tolerated enormously wealthy subjects, the governors of provinces did not always show themselves so nice. Tavernier says that in certain places the peasants were reduced to great poverty, "because if the governors become aware that they possess any property they seize it straightway by right of force. You may see in India whole provinces like deserts, from whence the peasants have fled on account of the oppression of the governors."* But this can rarely have applied to any but the outlying provinces, perhaps Gujerat and Bengal. Again, the roads were not uniformly safe; an escort of twenty or thirty men was necessary to travel across the empire in security. Thirdly, the harem was a great centre of intrigue. Not only did Shah Jahan waste much time among his women and latterly entrust all serious work of government to

The land revenue.

Certain vices of despotism apparent.

* 'Taj Mahal' is a vulgarization of this title of the Queen.

* Tavernier's *Travels in India*, translated by Ball I, 391.

his eldest son Dara, but the ladies of the court obtained undue influence over appointments, so that favour was often more powerful than merit. The position of governors and officials lacked stability: they were changed too frequently.

The foreign history of the reign is concerned chiefly with the Deccan and Afghanistan. Shah Jahan had as Prince Khurram carried on in Jehangir's reign the work that Akbar had begun in the Deccan. He had reduced Ahmednagar to the rank of a tributary State. Berar had previously been conquered by Ahmednagar and the northern part of it had, like Khandesh, been brought within the empire of Akbar. Bidar had become extinct. There remained therefore besides the new tributary state of Ahmednagar the two other Mussalman kingdoms of the Deccan, Bijapur and Golconda. Throughout Shah Jahan's reign the Deccan was disturbed by wars and rebellions. The Nizam Shahs of Ahmednagar were at last overcome by the emperor in person (1636) and their kingdom incorporated in the empire. Bijapur, which had assisted Ahmednagar in its struggles against the Moguls, was now for the first time rendered tributary. Twenty years later Aurangzeb, who was given complete command in the Deccan, would have added Golconda to the empire, but for the pacific commands of his father (1656), and was on the point of conquering Bijapur (1657) when the question of the succession summoned him to the north. Aurangzeb, however, after he had inherited the throne, did round off the Mogul dominions by overthrowing the last of the independent Mohammedan kingdoms of the Deccan. Their resistance in the reign of Shah Jahan is rendered noteworthy by the fact that it was strengthened by a new Hindu element, the Mahrattas. The weakening of the Mohammedan rulers in the Deccan strengthened the power and influence of the native Mahratta chiefs. One of these, Shahji Bhonsla, who held land at Poona, now assisted the kings of Bijapur in checking the aggressions of the Moguls. The emperor of Delhi doubtless seemed to such as he a more dangerous foe than the enfeebled local king. But the Moguls would have done well to regard the Mohammedan kingdoms of the south as the bulwark of Islam against the rising Hindu power. Shahji Bhonsla was the progenitor of the great Sivaji who with his descendents was largely responsible for the downfall of the Delhi empire.

Wars in the Deccan.

Annexation of Ahmednagar, 1636.

In Afghanistan, Kandahar, previously lost, was surrendered to the Moguls in 1637. But in 1648 it was reoccupied by Persia, and despite three attempts at re-capture was not again subdued, being finally lost to the empire. Kabul, however, remained a part of the Mogul empire until its conquest by Nadir Shah in 1738. In this reign an invasion of Balkh was attempted, but it ended in disaster: it was impossible to conduct successful warfare beyond the Hindu Kush.

Kandahar and Balkh.

During the present reign, the European settlements continued to increase in number and importance. The Portuguese power indeed declined, and in 1631 they were driven out from Hugli with great slaughter, the pretext being that they had assisted in the marauding and slave-raiding expeditions which at this time disgraced the Sunderbunds. The imperial army besieged the town for fourteen weeks, and after the Portuguese were once driven out, they never regained their position in Bengal.* The Dutch and English were the rising commercial powers in the east. The foundation of English commerce in the east has already been noticed in dealing with the reign of Jehangir. Under Shah Jahan the East India Company greatly extended its operations. Fort St. George was founded in 1639 on a piece of land granted by a native poligar who was descended from the kings of Vijayanagar.† A factory was opened in Orissa, and the English replaced the Portuguese at Hugli in Bengal. These projects were liberally favoured by the emperor, for the English traders made themselves less hated than the Portuguese in their dealings with the natives. They did not aspire as yet to empire; were less greedy and tyrannical, and above all, had no inquisition. The Dutch meanwhile had established factories on the Malabar Coast (*e. g.*, at Surat) and did almost more than the English to break down the commercial monopoly of the Portuguese. But they were destined not to reap the fruits of their victories, and after a long period of obstinate rivalry with the English (about 1605-1689) they were reduced to a very secondary position on the mainland and devoted their energies to the islands of the Eastern Archipelago, where they succeeded in building up a glorious colonial empire. It is to be remembered that the French did not appear in India as traders until the reign of Aurangzeb. The travellers Tavernier and Bernier brought India to the notice of the French government by the accounts of their journeys in the middle of the seventeenth century, and thus paved the way for French commercial undertakings, as Linschoten had done in the case of the Dutch.

Growth of European settlements and commerce.

Decay of the Portuguese.

Rivalry of English and Dutch.

The interest of Shah Jahan's latter years centres round the struggle for the succession. Like Akbar and Jehangir the old emperor was troubled by the rebellious ambitions of his sons. But in his case the succession question was more complicated. He had four sons, Dara, Shuja, Aurangzeb, and Murad. "Each was animated with the sole desire of securing for himself the succession to the throne, and consequently regarded the others with suspicion and hatred." To stop their quarrels and intrigues and perhaps also to ease his own shoulders of the now distasteful burden of sovereignty, the emperor appointed his sons governors of four distant provinces. This, however, gave them opportunity to raise armies for the execution of their designs. When in 1657 Shah Jahan was believed to be dying, each of the four sons prepared to fight for the throne. Dara had left his viceroyalty in the north-west and was acting as regent at Delhi. Shuja was in Bengal, Murad in Gujerat, and Aurangzeb in the Deccan. Shuja

Struggle for the Succession, 1657-8.

* For a graphic account of these transactions see the *Badshah-nama* of Abdul Hamid Lahori, Elliot, VII, pp 31-5. Some of the Moslem grievances against the Portuguese in general are cited by Khafi Khan, *ibid*, pp. 344-5.

† See p. 10 *supra*.

was the first in the field, but was defeated near Benares and driven back into Bengal. Aurangzeb craftily offered his services to Murad and the two joined forces with the result that the royal army, despite the bravery of its Rajput general, was destroyed on the banks of the Narbada (1658). Dara, whose succession was secure if he crushed the forces of the coalition, then marched out at the head of a magnificent army of 100,000 horse, 20,000 foot, and 80 guns. The two armies met at Samugarh, afterwards known as Fatehabad, 'the City of Victory,' on the Chambal. In sweltering heat the battle swayed to and fro, until the cool courage of Aurangzeb gained the day. Many of Dara's men were half-hearted, and he himself was indiscreet. All the world tendered their homage to Aurangzeb, who saluted Murad as emperor, until he found opportunity to seize him in a moment of drunkenness. Shah Jahan was kept a tight prisoner in the palace at Agra, loaded with presents and beguiled with amusements until he died in 1666 at the age of seventy-six. His popularity must have sadly waned, otherwise more effort would have been made to save him from such disgrace. Aurangzeb successfully disposed of his rivals and overcame all their efforts to dispute the throne. Within three years Dara and Shuja suffered fresh defeats. Dara was betrayed into Aurangzeb's hands and executed. Shuja came to an unknown end in his wanderings, and Murad was put to death in prison. Aurangzeb had triumphed by his duplicity and cunning no less than by his qualities as a leader and a general. His puritanical method of life and his bigoted orthodoxy were also responsible for gaining over to his side that large body of Mohammedans who felt that conciliation and free thinking had gone too far, and who saw in Dara a sceptic, in Shuja a debauchee, in Murad a wine-bibber.

Battle of Samugarh, 1658.

Aurangzeb triumphant.

IV.—Aurangzeb, the Puritan Emperor.

Aurangzeb's long reign of nearly half a century witnessed events which were fraught with grave importance for the destinies of India and the history of the world. Under him the Mogul power reached its apogee and began to decline. The rise of the Mahrattas threatened the very existence of the empire, and the growth of the English settlements marked the advent of a power destined to contest with the Mahrattas for the Mohammedan inheritance. Aurangzeb mounted the throne in the very year that Cromwell died and outlived three successive monarchs of the British Isles. Before he died, England had passed safely through the revolution, and with the establishment of a national foreign policy had entered upon that career of colonial and maritime enterprise which resulted in the overthrow of all European rivals in the east during the 18th century and in the foundation of a glorious Indian empire. But during the present reign Britain's ultimate supremacy remained concealed in the womb of the future, while France under *Le Grand Monarque* enjoyed an unrivalled ascendency in Europe, and laid the foundation of a power in India which for a long time seemed likely to exceed all rival efforts.* From this time forward Europe and India were more closely bound up together: the east was no longer isolated from the currents of European activity, and mercantile ambition led gradually to territorial domination. Notwithstanding under Aurangzeb, as under his father and grandfather, we only see the small beginnings of these great events.

Aurangzeb, 1658-1707.

Growing connection between India and Europe.

Aurangzeb took for his title the Persian word Alamgir, 'world-compeller,' but to Europeans he has been always known by his own name. His character was a striking mixture of greatness and littleness. A capable general and organizer, unusually brave, even for a Mogul, a conscientious ruler and a religious man, he gave himself to the work of government with rare wholeheartedness, nor spared himself from the minutest details of administration either in sickness or in age. He superintended the whole work of government with the perseverance of Philip II, and controlled every wheel of administration with the unvarying patience of Frederick the Great, yet his reign was a failure because of his great defects. He was a puritan more bigoted than Cromwell, and he sacrificed the welfare of the state to religious orthodoxy with the recklessness of Louis XIV. His conscience dictated persistent warfare against all Shias, and persecution of all 'infidel' Hindus. He was perverse in mind and short-sighted in policy, malicious and sometimes treacherous towards foes, suspicious towards all, including his sons and friends. He suffered from a deficiency of heart: intellect and will-power alone do not qualify a sovereign to rule a composite and extensive empire. But, in spite of all failures and mistakes, the indomitable resolution and dogged perseverance of the man compel our admiration. He was a grand solitary figure fighting against tremendous odds, certainly misguided, but as undeniably great.

His character.

Unfortunately our sources for the history of the reign are more limited than in the case of the last two emperors. Aurangzeb distrusted historians, and forbade the writing of history during his reign. But Khafi Khan, one of the best of Indian historians, took notes in secret, and some years after the emperor's death published his great history of the House of Timur. The part dealing with Aurangzeb has the advantage of being largely the result of personal observation: it is the best connected account of the reign that we possess.† There is unluckily a comparative dearth of European travellers. But we have Bernier, a French physician of acute observation, whose extended sojourn in India during the earlier part of the reign impelled him to write a 'History of the States of the Great Mogul' and several lengthy letters to Colbert and others on the conditions of trade, society‡ and government. The other European travellers who visited different parts of India during the last part of the 17th century stayed a shorter time and saw less, so that they hardly call for mention in this place. The European mercantile communities in their coast settlements supplied as yet no literary genius, nor did their members travel extensively through India.

Authorities.

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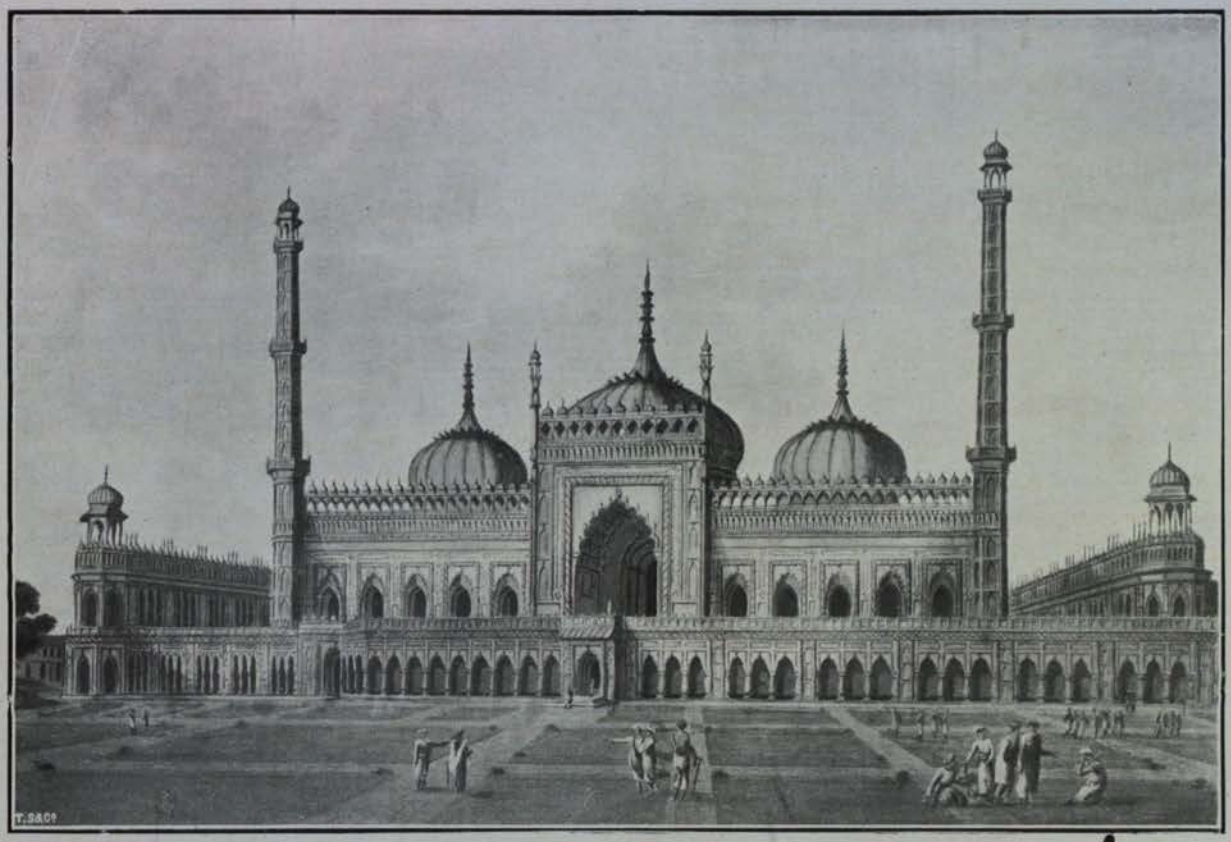
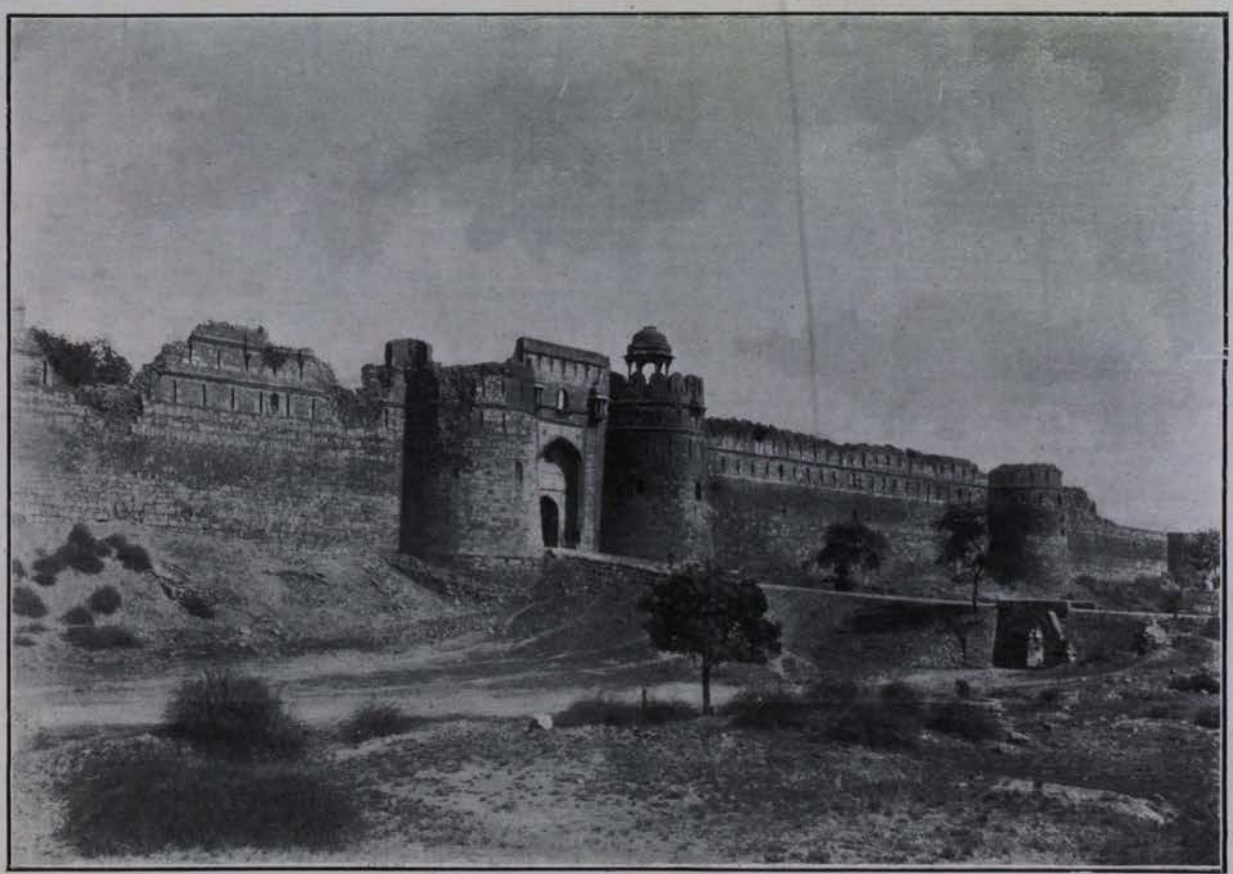
* See Vol. III. (ii.) in this Historical Summary.

† For an abridged translation of that part of the work dealing with Aurangzeb and his immediate successors, see Elliot, Vol. VII.

‡ See Bernier's *Travels*, translation, A. Constable.



MOSQUE AT LUCKNOW. (From a painting by Henry Salt, about 1809.)



Front or West View of Purana Kila near Delhi, standing on the site of the citadel of Indraprastha, founded by Yudhisthira in 1450 B. C.

Known also as Indrapat, Dinpana, and Shergarh or Shahgarh.

The reign may be divided into two easily defined periods, the year 1676 being the dividing line between them. In the first period, which comprises eighteen years, the magnificence and power of the Mogul empire reaches its culmination, while in the second the principle of toleration by which alone it had become so great, is violated, and consequent decline begins. But with what was perhaps the most formidable problem of the reign no dividing line is possible. The rise of the Mahrattas to the position of a great national state was well nigh continuous throughout the reign of Aurangzeb. In respect of this great question, 1680, the date of Sivaji's death, is the most notable landmark. Thenceforward Aurangzeb devoted himself to stamp out the Mahratta power, and the war in the Deccan occupied his best energies for the remainder of his days. It will be necessary to deal with the Mahratta question separately after the other noteworthy events of the reign have been outlined.

Chronology of the reign.

Aurangzeb does not seem to have been fully sure of his position until the death of his captive father in 1666. Thenceforward his position was undisputed, and except in the Deccan prosperity for a time attended his government. Amir Jumla, a capable but dangerous favourite, and a renegade servant of the king of Bijapur, had been in 1662 entrusted with an expedition against the mountain kingdom of Assam. Owing to the difficulties encountered and a violent outbreak of cholera, the attempt failed. But in the provinces of Hindustan there was peace and prosperity. A successful war was waged in 1666 against the king of Arakan on the Bay of Bengal, and the troublesome pirates of Chittagong, who had received protection from this monarch, were dispersed. In the west also, there was peace, and embassies were received from the kings of Persia and Ethiopia (Abyssinia), as well as the Sherif of Mecca. In the early seventies, however, a troublesome war broke out with the Afghan tribesmen, and although the Emperor appeared on the frontier in person, his hold on Kabul was weak, and the settlement he arrived at (1675) was unsatisfactory. South of the Narbada the Mahrattas under their chief Sivaji were gradually extending their power, and the Moslem kings of Bijapur and Golconda were still unconquered. Still the greater portion of the provinces of the empire remained at peace and enjoyed a fair measure of prosperity, and it is not until 1676 that we reach the turning point of the reign.

First period, 1658-1676.

The bulk of the empire peaceful and prosperous.

Henceforward the intolerant orthodoxy of Aurangzeb asserted itself more disastrously. The loyalty of the Hindu element, and particularly of the Rajput, was undermined, and disaffection at home crowned with success the efforts of the enemy without. In the early years of his rule Aurangzeb had wisely maintained the conciliatory policy of his predecessors. He had pardoned Jaswant Singh, the Raja of Marwar, for espousing the cause of Dara, and he had married his eldest son to a Hindu princess. But certain measures taken in the first period of the reign anticipated the persecution which was to come. Astrology was forbidden and poets were discouraged. Gambling houses were shut up; an edict was issued against music and dancing; the great fairs which accompanied Hindu festivals were prohibited. This puritanical system must have caused no little discontent, although it is doubtful whether it can have been enforced outside the larger towns. In 1676 the emperor's temper was soured by a formidable insurrection of the Satnamaris, a sect of Hindu devotees. The trouble arose in a police affray and extended so rapidly that it caused considerable difficulty to the government. The bigotry of Aurangzeb was now thoroughly aroused. He destroyed Hindu temples at the sacred cities of Muttra and Benares, and dismissed from the revenue service all Hindu officers, with the result that the revenue system fell into confusion. Partly as a means of replenishing his coffers, partly to satisfy his religious fervour, he in 1677 revived the hated *jiziya* or poll-tax on non-Moslems. This made more complete the estrangement between him and his Hindu subjects, and when crowds of expostulating Hindus blocked his way to the mosque, he forced his elephants forward over their bodies.* Such a policy was as foreign to the course pursued by Akbar and Shah Jahan as Aurangzeb's indeterminate policy in the Deccan. The wisdom which built up the Mogul empire could never have been guilty of such mistakes. To stir up opposition in the home provinces of the empire was doubly dangerous now that the Mahrattas were waging a national war in the Deccan. The emperor's dealings with the Rajput princes kindled the sparks of discontent into a flame. Jaswant Singh died at Kabul in the same year and Aurangzeb attempted to seize his sons in order, it is credibly asserted, to bring them up as Moslems. The young princes were successfully spirited away out of the emperor's reach, but the outrage provoked a combined Rajput rebellion. The Rajas of Marwar and Mewar (Jodhpur and Udaipur) commanded bodies of splendid horsemen, and were protected by a belt of sandy desert. The emperor's fourth son, Prince Akbar, deserted to the enemy, and the Rajputs seemed to be on the eve of a splendid success. But the cunning of the emperor prevailed: Akbar and his new allies were separated, the country was ravaged with fire and sword, three hundred shrines were cast down, and Rajputana sullenly submitted. The severity of the conqueror's measures of retaliation, which spared neither women nor children, resulted in the permanent alienation of the Rajputs. The sore was never healed and instead of having the Hindu chivalry as his allies in the Mahratta war, Aurangzeb was constantly troubled during his later Deccan campaigns with the mutterings of rebellion in the north. The proud and haughty Rajputs, who had so long been the bulwark of the empire, became a source of weakness and anxiety. For more than the last twenty years of his life Aurangzeb was campaigning in the Deccan, and the longer he remained absent from the north, the more the empire fell into disorder. The treasury was drained for the endless expenses of an unsuccessful war, and the gradually diminishing

Second period, 1676-1707.

Rebellion and disaffection.

Decline of the empire begins.

Revival of the Jiziya, 1677.

Rajput revolt, 1679-1680.

Rebellions and disorder in the north during later part of his reign.

* See *Khafi Khan*, Elliot, VII, 296.

prestige of the emperor made itself felt far and wide. The later years of the old ruler were complicated by a rebellion of the Jats near Agra, and a Sikh insurrection in the Punjab, as well as continued Rajput hostility. The monarchy was now frankly Mohammedan and alien. Hindus were all excluded from office, Hindu merchants were taxed double on their commercial transactions; the Hindu religion was as far as possible repressed in its public manifestations at least. This policy sounded the death-knell of the Mogul empire as surely as Philip II ruined the prosperity of Spain and Louis XIV that of France by intolerance of religious beliefs other than their own. The curtain of Aurangzeb's life-drama falls upon a scene of no good omen for his house—three great Hindu nations, Mahrattas, Rajputs, Sikhs, all in arms against the Moslem. These peoples shattered the Mogul empire before the British appeared upon the field: it was from them therefore rather than from the house of Timur that the British conquered India.

Wars in the Deccan.

In the Deccan Aurangzeb's policy was to complete the work which had all but been completed during his viceroyalty —the subjugation of the remaining Mohammedan kingdoms, Bijapur and Golconda. But whether this was the correct policy to pursue is a different matter. The Moguls were anxious to extend their empire to the south, and did not readily tolerate a Mohammedan domination other than their own. Still the question was now complicated by the rise of a new power, the Hindu Mahrattas. Shahji's* son Sivaji led the national movement, which gave a new and powerful enemy to the Mogul. The independent Mohammedan kingdoms were daily growing more enfeebled, whilst the Mahrattas were a growing power. Sivaji was really the enemy to be feared, not the sham kings of Bijapur and Golconda. Had Aurangzeb supported these kingdoms rather than overthrown them, they might have remained a powerful bulwark of Islam against the Mahrattas. But the emperor was a bigoted Sunni and the kings of Bijapur and Golconda were Shias. Hence he wasted much precious time and energy in overthrowing what had to a great extent been a guarantee of order in the Deccan. Before, however, the final extinction of these independent kingdoms took place, a number of important events had occurred in the Deccan. The Mahrattas were a peaceful agricultural community of low caste inhabiting the Konkan and the Western Ghats. Since the times of Pulikesin the energies of Maharashtra had lain dormant. But now the Mahrattas, who formed the main portion of the King of Bijapur's subjects, began to distinguish themselves again in arms, more particularly as light cavalry men. They acted also as officials, and *Mahrathi* was adopted for the revenue work of the kingdom. Shahji Bonsla was, as previously noticed, a Mahratta chieftain, who had obtained land and influence in his native country during the reign of Shah Jahan. His son Sivaji, born in 1627, was educated at Poona, but his education was physical and military rather than intellectual. The youth early caught a taste for adventure, and the weakness of Bijapur soon provided scope for enterprise and daring. Sivaji began as early as 1646 to seize upon the hill forts in the neighbourhood of Poona. These he fortified and garrisoned so that they became almost impregnable. In 1648 he threw off the mask and openly revolted against Bijapur. His adherents were now numerous enough for more extensive undertakings. The northern Konkan was seized and all the Western Ghats above this coast district were dominated by the daring rebel. The details of his career are beyond our province in this place; suffice it to say that this course of insurrection was continued with slight intermissions until in 1655 Sivaji felt himself strong enough to plunder the Mogul provinces round about Ahmednagar. His attacks upon Bijapur were followed up by the treacherous assassination of a Bijapur general, Afzal Khan, in 1659. Eventually the King took the field in person, and recovered many of Sivaji's conquests, but the Mahratta was left with a considerable territory extending from Kalyan to Goa on the coast and from Poona to the Krishna on the plateau (1662). In this year took place his final rupture with the Moguls. The uncle of Aurangzeb, Shaista Khan, was all but taken in a daring night attack on Poona: Surat, which was indirectly under Mogul government, was plundered in 1664, and in the following year Sivaji assumed the title of Raja. His father, who had ruled a territory to the south of Bijapur, conquered by himself, died in this year. At this juncture the Emperor despatched such a powerful army into the Deccan under the command of Jai Singh, Raja of Amber, that Sivaji despairing of success, submitted, lent his sword to the Moguls against Bijapur, and agreed to hold certain possessions as a jagir from the Emperor. Flattered by fair promises, he attended the Court of Delhi, but finding himself coldly received and imprisonment contemplated, he escaped by a stratagem (1666) and recommenced his adventurous career in the Deccan. He speedily regained more than his former possessions, levied tribute from Bijapur and Golconda, again plundered Surat, ravaged the Khandesh (1670) and for the first time defeated a Mogul army in a field-action (1672).

Aurangzeb's short-sighted policy.

Rise of the Mahrattas.

Sivaji, 1627-1680.

Rebels against Bijapur.

First wars with the Moguls.

Sivaji at Delhi, 1666.

Successes against Mogul armies.

During the next few years Aurangzeb's attention was taken up with Afghan affairs and the Rajput rebellion in the north, so that Sivaji continued his course almost unimpeded. The Mahrattas crossed the Narbada for the first time in 1675, and then reconquered for Sivaji his father's jagir in Mysore. He was assisting the King of Bijapur to resist a determined Mogul attack when he died, in 1680. Sivaji was more than a robber chief: he was the leader in a great national movement, and he built up with exceeding rapidity a considerable kingdom which he governed as ably as he defended it. Aurangzeb spoke of him as "a great captain," and said: "My armies have been employed against him for nineteen years, and nevertheless his state has always been increasing."

Death of Sivaji.

His greatness.

* See p. 23 *supra*.

The spirit Sivaji had created was not crushed with his death. Aurangzeb arrived in the Deccan in 1683 and took personal command of the Mogul armies. Until his death in 1707 he was almost uninterruptedly occupied in attempting to overthrow the Mahrattas, but the end was total failure. His short-sighted policy led to the final extinction of the kingdom of Bijapur (1686) and of Golconda after a stirring siege (1687). The social and political organization of those kingdoms being broken up, the Deccan sank into a state of anarchy. The armies of the defeated kings flocked to the standards of Sambhaji, Sivaji's son, and the Moguls were not strong enough to conquer them. The degenerate and undisciplined condition of the Mogul army was unequal to the task before it. A military occupation of the Deccan was accomplished, and Sambhaji, when he fell into the hands of his enemy, was cruelly executed (1689). But the Mahrattas distinguished themselves under the regency of Raja Ram in a predatory guerilla warfare which wore out the forces of Aurangzeb. Hardy swordsmen and daring riders, they were adepts in the art of laying ambuscades, seizing forts by stealth and cutting off convoys of provisions. Under this system Mogul victories were of no value, and few opportunites were given them of gaining victories in the open field. On the other hand, defeats made no impression on the Mahrattas. Aurangzeb might capture the important fortress of Satara and might disperse their forces: they would promptly appear in another part of their mountainous country and raid an unsuspecting Mogul camp. They plundered even as far north as Malwa and Gujerat and began to be a terror to the empire. In these years of strenuous conflict against unequal odds the endurance and bravery of the old emperor is the most remarkable feature. He planned and controlled every movement in person at the same time as he superintended the minutest affairs of his extended empire. An octogenarian, he suffered storm and flood, privations and fatigue, and when in his eighty-ninth year the worn-out veteran withdrew his dejected remnant into Ahmednagar, it was time for him to die and confess his failure. The empire was in a state of anarchy beyond example. Disaffection was rife beyond the Vindhyas: the Mahrattas had been formed by resistance and trained by warfare into a powerful nation; no future emperor could hold undisputed sway south of the Narbada. Aurangzeb died in 1707 in the fort of Ahmednagar, telling his beads, repentant of his sins, and morbidly afraid of death. His is beyond dispute a grand figure, in spite of all his narrowness and folly. He was throughout true to the colours of his faith, such as he understood them. His life was tragedy, and a vast failure, but he failed grandly.

Aurangzeb's campaigns in the Deccan, 1683-1707.

Annexation of Bijapur and Golconda, 1686-7.

Guerilla warfare. Impossibility of subduing Mahrattas.

Indomitable resolution of Aurangzeb.

His death, 1707.

Bernier, in a letter to the great French minister Colbert, has some interesting remarks upon the condition of India in the early part of Aurangzeb's reign. He dwells on the extreme fertility of certain provinces, such as Bengal, and notices the prosperous condition of manufactures in various parts of the empire. At the same time there were vast tracts of sandy and barren country, badly cultivated and thinly peopled. "Even a considerable portion of the good land remains untilled from want of labourers; many of whom perish in consequence of the bad treatment they experience from the governors. These poor people, when incapable of discharging the demands of their rapacious lords, are not only often deprived of the means of subsistence, but are bereft of their children, who are carried away as slaves. Thus it happens that many of the peasantry, driven to despair by so execrable a tyranny, abandon the country, and seek a more tolerable mode of existence either in the towns or camps, as bearers of burdens, carriers of water, or servants to horsemen. Sometimes they fly to the territories of a raja, because there they find less oppression, and are allowed a greater degree of comfort."* The men who held the high positions at court, in the army and in the provinces, were known to Bernier and other Europeans as *Omrahs*, that is, Amirs. Many of these were Persians of high birth, but Aurangzeb attempted to clear his court of Persian Shiahs. The Omrahs who, it must be noticed, were not a hereditary nobility, drew immense salaries calculated on the number of horse which they nominally commanded. Some were paid in cash, others by jagirs, but despite their wealth they were constantly in debt owing to the huge presents etiquette required the emperor to receive. It is not improbable, therefore, that they fleeced the peasantry. Land not alienated as jagirs was known as the king's domain land: there the revenue collection was handed over to contractors, who like the Roman tax farmers lined their own pockets at the expense of the provincials. Thus the well-considered financial methods inaugurated in the reign of Akbar seem to have been discontinued by his great-grandson. The upkeep of the royal court must have cost fabulous sums. The thousands of slaves and attendants, the stables, the luxurious travelling equipages, and above all the seraglio, were a tremendous drain upon the resources of the kingdom. No doubt Shah Jahan spent more in these ways than his son, but on the other hand his war expenses were unusually light. Bernier and other contemporary observers lay great stress upon the fact that the emperor was sole land-owner in the state. Jagirs were only held during office, or for life at most, nor was there the same security of occupancy amongst the peasantry as at the present day. The governors were therefore tyrannical and bent on enriching themselves as speedily as possible; while the peasantry had little incentive to work and render the land more productive. Slavery and universal ignorance are two further blots upon the page of Mogul civilization in India. Bernier's conclusion is worth quoting: "The country is ruined by the necessity of defraying the enormous charges required to maintain the splendour of a numerous court, and to pay a large army maintained for the purpose of keeping the people in subjection. No adequate idea can be conveyed of the sufferings of that people. The cudgel

Aurangzeb's government.

Oppression of the peasantry.

The Omrahs.

Defective revenue system.

Expense of the court, etc.

* Constable's *Bernier*, p. 205.

and the whip compel them to incessant labour for the benefit of others, and driven to despair by every kind of cruel treatment, their revolt or their flight is only prevented by the presence of a military force. The misery of this ill-fated country is increased by the practice which prevails too much at all times, but especially on the breaking out of an important war, of selling the different governments for an immense sum of hard cash. Hence it naturally becomes the principal object of the individual thus appointed governor, to obtain repayment of the purchase-money, which he borrowed as he could at a ruinous rate of interest."* He had also to find the means of making valuable presents, not merely to the emperor, but to a "vazir, a eunuch, a lady of the seraglio, and to any other person whose influence at court he considers indispensable." The emperor, indeed, kept news-writers in every province to report on the conduct of officials, and Aurangzeb adopted a wholesale system of espionage; but the watcher and the watched often entered into collusion to the great detriment of the public. The government of India seemed to Bernier less venal than that of Turkey, but the main errors of government which, as he says, naturally bring about tyranny, ruin and misery, were common to all the three great oriental monarchies,—India, Persia, Turkey. These characteristics must to some extent be regarded as the natural tendencies of despotic government in a country where a large proportion of the people are unwarlike and where the institutions of the harem and slavery flourish. With exceptions and qualifications, therefore, Bernier's picture will stand as a presentation of the state of India during the Mogul period. Akbar was too strong a man to tolerate such abuses, and the traditions of good government fashioned by him to a large extent survived under Jehangir. With the latter years of Shah Jahan, however, the government underwent a change for the worse, and Aurangzeb, despite his high ideal of kingship and his indefatigable exertions, failed to remodel the administration. Native historians say that he was too weak and lenient. Corrupt officials were unafraid of punishment: and hence, though the emperor was himself the model of equity in his court, injustice flourished in the provinces. Aurangzeb enquired into all abuses and often rectified them. He even remitted various items of taxation, but the governors seem to have gone on collecting the abolished cesses. Thus were the best intentions of a conscientious ruler defeated by the defects inherent in the system. Things might however easily have been worse, and the colouring of Bernier's picture is perhaps slightly heightened by the contrast between eastern conditions and those of Europe,—a contrast which must have greatly impressed any European traveller. Moreover, he had acquaintance with only a few of the provinces of the empire.† But even if Aurangzeb's early government be allowed a fair meed of praise, the conditions of the empire during the last period of his reign must be admitted to have been awful. Suspicion and intolerance alienated able servants and counsellors, whole tribes and nations. The central authority became weak and shadowy, there was no restraint on the oppression of the magnates. India seemed once again on the eve of disintegration into a number of separate kingdoms. In the words of Khafi Khan, a friendly historian, "from reverence for the injunctions of the law (the law of Islam) he did not make use of punishment, and without punishment the administration of a country cannot be maintained. Dissensions had arisen among his nobles through rivalry. *So every plan and project that he formed came to little good; and every enterprise which he undertook was long in execution, and failed of its object.*" The explanation of this failure is incomplete if it does not lay stress on Aurangzeb's religious intolerance and his unsympathetic mind, but the fact of failure is patent to all.

A lurid picture of Mogul civilization.

Aurangzeb's early government not radically bad.

But his later measures reduce the empire to anarchy.

During the reign of Aurangzeb the European settlements in India had been increasing both in number and importance. The Dutch continued and completed the overthrow of the Portuguese power in India and Ceylon. Portugal lost her possessions and her trade: Goa, Diu and Damaun alone remained. But the commercial inheritance of the Portuguese was hotly contested between the Dutch and the English. For a short time at the close of the 17th century the Dutch were the greatest European power in Asia, but their most successful efforts, as noticed above,* lay in the Islands of the Eastern Archipelago. From about 1700 Holland began to decline in Europe, with the result that her power in the east declined also. England and France were now the rising commercial forces in India.

The European settlements in India.

Dutch complete overthrow of Portuguese.

The foundation of English trade in the Indies and the increase of their settlements have been adverted to under the reigns of Jehangir and Shah Jahan. Further progress is to be noted during Aurangzeb's long reign. The island of Bombay passed to Charles II from Portugal, as the dowry of his Portuguese wife. It was in 1669 transferred to the East India Company who made it their western capital. A prosperous town soon sprang up where lately a meagre fishing village had existed. Here the English factors governed and administered their own land, erected their own mint, and strengthened their position by a fort. When Surat had been the western centre of the Company, English, Dutch and Portuguese settlements had all existed defencelessly side by side under the eye and control of a Mohammedan governor. The change to a position of independence and territorial jurisdiction was not the result of any ambition for empire, for the directors of the Company still had no thought but for trade. But the growing anarchy and the lawless depredation of the Mahrattas necessitated a change of policy. Aurangzeb's mismanagement of his empire therefore was responsible for the beginnings of English territorial rule in India. The Company during this time maintained and added to its factories on the Coromandel Coast, and also obtained a firmer foothold in Bengal. In 1686 the English moved from Hugli to Calcutta, so that the seventeenth century witnessed the foundation of the three Presidency towns of the British Empire.

But Dutch greatness shortlived.

Growth of English settlements.

Important change of policy.

* Bernier, *ibid*, 230.

† It must also be remembered that the village communities of India were better calculated to protect the poor from the rapacity of the great than the feudal system which in the seventeenth century still survived in the greater part of Europe. In spite of all, arts and industries flourished in India. The condition of the French peasant before the revolution was, if anything, worse.

* See p. 23 *supra*.

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Growth of Railways in India.

THE growth of Railways in India forms a history illustrating most vividly the difficulty of developing what are, in the main, commercial undertakings, independently of the capital held by the Natives of the country. Had the moneyed classes in India realized from the first the importance and ultimate immense advantage of improved communications, these difficulties would have been slight. As practically no such contributions have been received, the necessary funds had to be found by the Government, and the history naturally divides itself into the policies carried out by each Viceroy in his turn; policies in which his own individual opinion had, generally, a preponderating influence. It will be seen that these conditions did not lead to a continuity of policy either in construction, maintenance, or in due provision for meeting the extraordinary expansion, both in traffic on open lines and the imperative demands for new railways, and for developing or increasing the capacity of existing systems.

LORD ELLENBOROUGH.
1842—44.

In 1843, just before the railway mania in England, a company, of which Mr. (afterwards Sir R.) Macdonald Stephenson was Chairman, proposed to construct railways in India, and Sir Macdonald may, therefore, be considered to have been the pioneer of these enterprises. The deadly famine in 1837 over the North-West Provinces and Rajputana provides an object-lesson of what used to happen in India before it was possible to throw food-grains into the stricken districts.

LORD HARDINGE.
1844—48.

In 1845, the East Indian Railway Company submitted a prospectus to the Court of Directors, East India Company, proposing to raise a capital of one million sterling for an experimental line, 140 miles long, from Calcutta to Allahabad. At that time the Grand Trunk Road was being constructed towards Peshawar, and the only intercourse with England was by sailing vessels round the Cape. The governing bodies were the Court of Directors of the Honorable East India Company, the Board of Control, and the Government of India. The first suggestion was for a three per cent. guarantee, or its equivalent in an annual bonus. Mr. Macdonald went out to India in July of the same year, also a Civil Engineer, Mr. Simms, accompanied by two Indian Royal Engineers, and such good work was done that by April 1846 the survey of the line from Calcutta *viâ* Mirzapur to Delhi was completed; important statistical information was obtained and an elaborate report was transmitted to the Directors. Mr. Simms submitted a memo. on February 2nd, 1846, suggesting terms which have become, in a major part, the basis on which railways have since been constructed by companies.

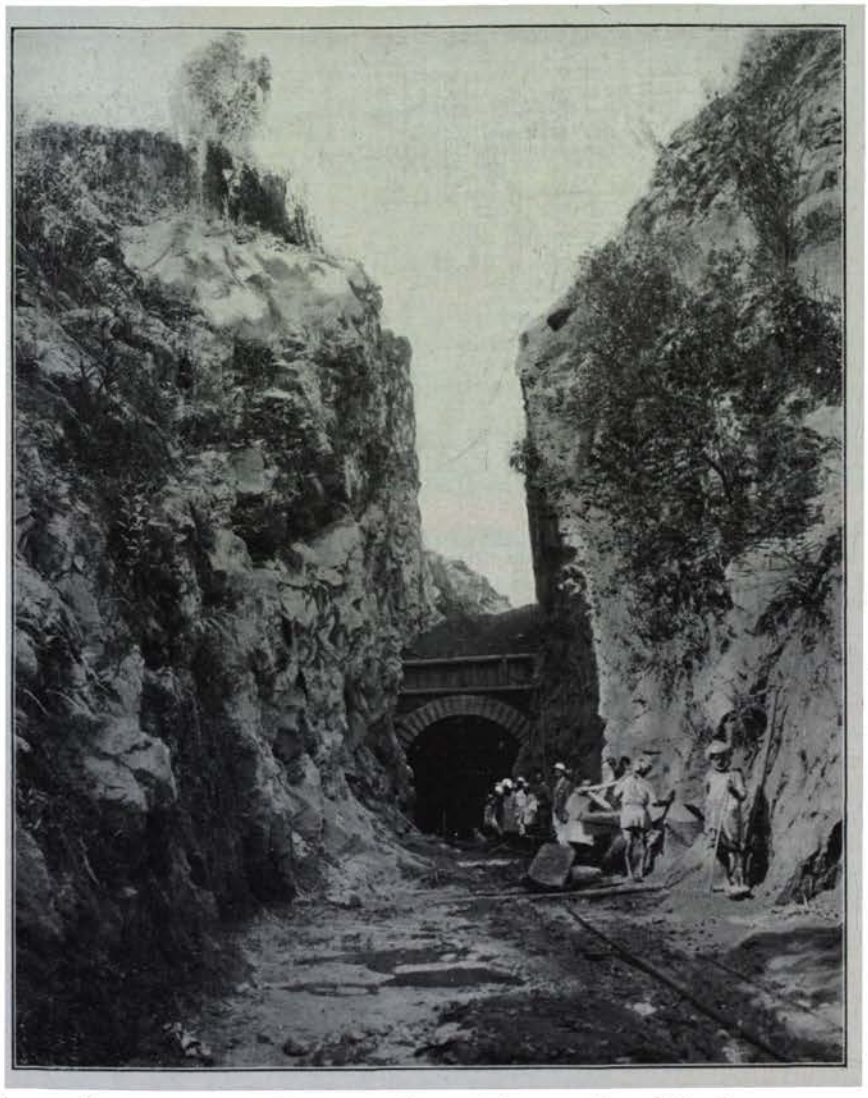
Meanwhile, the Court of Directors sent out a despatch to the Governor-General, in which they expressed an opinion that there were special dangers attending railway construction in India, such as floods, cyclones, white ants, and luxuriant vegetation, besides the absence of competent engineers acquainted with the peculiarities of the country, which did not encourage them to recommend any operations on a large scale. In consequence, the only contracts made were for 192 miles in all, *viz.*, Howrah to Raniganj; Bombay to Kalyan, and Madras to Arconam. At this time the Government of India may be considered to have been lukewarm, although the Governor-General was strongly in favour of assisting private enterprise; as to the Board of Control it was "narrow and obstructive," and it was not until 1847 that the terms of the above contracts were settled. The Bombay project was submitted to Robert Stephenson, who disapproved of the Government proposals.

MARQUIS OF DALHOUSIE.
1848—1856.

On the 19th March 1849, the Secretary of the Board of Control, James Wilson, sent a despatch to the Court of Directors and agreements were eventually signed on 17th August 1849. It was proposed to start from Calcutta towards Mirzapore or Rajmehal and to put down the English narrow guage, *viz.*, 4 ft. 8½ in. Mr. Simms, in a despatch, dated August 2, 1850, recommending a wider gauge, stated that thereby the centre of gravity of all rolling-stock would be lowered, the lateral oscillation lessened, motion rendered easier, and wear and tear diminished. Lord Dalhousie sent a despatch from Chini in July 1850, advising a Burdwan alignment so as to tap the coal-fields. He also advocated a single line of a 6 ft. gauge. Meanwhile, the Court of Directors were beginning to realize the enormous advantage, both moral and material, attending the development of railways and roads, and expressed a wish to possess a regular system of railways, and that without unnecessary delay. Work was commenced on the East Indian Railway in January 1851. The

Court of Directors having settled on the present standard gauge of 5 ft. 6 in.; Mr. (now Sir Alexander) Rendel being the Consulting Engineer. The Madras Railway in 1852 made an unsuccessful attempt to obtain sanction for constructing railways by direct State work.

The year before any railway was opened, the gross trade of the country amounted to Rs. 32 crores, and had stood at that figure for some time. Lord Dalhousie's celebrated minute was signed on April 20, 1853, and was one of the most statesmanlike documents that has ever been penned. The Governor-General considered that railways are National Works, and that they should therefore be controlled by Government under regulations settled by law, which should not be needlessly or vexatiously exacting. He advocated the immediate construction of trunk lines from Calcutta to Lahore, from Bombay to tap this one; from Bombay to Madras, and from Madras to the Malabar Coast on the West. He foresaw the great social, political, and commercial advantages of such lines, which were to form the main arteries of a complete network of railways.



ASSAM-BENGAL RAILWAY.—Cut and Cover at Tunnel No. 8a.

The system of Government Consulting Engineers was first introduced in 1849, one being allotted to each local Government. These were subsequently reduced to four, *viz.*, the State, Madras, Bombay and Burma. Although the Court of Directors had approved a large scheme and had ordered surveys on August 17, 1853, during the three years from 1853 to 1855, only 169 miles were opened, being an average of 56 miles a year. The capital outlay during that period was Rs. 5,50,00,000 or Rs. 1,83,33,000 a year. The average gross earnings per mile per week were Rs. 81; the average percentage of working expenses to gross earnings was 54,33; and the percentage of net earnings to capital outlay 0·72. The first sanction to the construction of the North-East lines of the Great Indian Peninsula was given in 1850; the South-East line was sanctioned in 1854. The first opening of any portion of the following lines for traffic occurred in this period, *viz.*, the East Indian and the Great Indian Peninsular.

LORD CANNING.
1856—1862.

By the end of 1855 Lord Dalhousie's projected railways were being actively carried out; but progress was checked by the Mutiny of 1857, although it was due to the guaranteed system that the work was not stopped altogether, for funds were available which, under State control, would have been required elsewhere. The invaluable service rendered to the military by the short length of line then opened was again an object-lesson to the authorities. After the Mutiny in 1857, which was estimated to have cost the railways some three millions sterling, the friction that had arisen between the civil engineers and the consulting Royal Engineers in India became so acute that the matter was brought before the House of Commons; the result being that a compromise was effected, though it would have been much better had the matter been fought out. India passed directly under the Crown in 1858 and the reign of the Hon. East India Company came to an end.

On March 13, 1860, the late Sir Juland Danvers, then Secretary to the Railway and Telegraph Department of the India Office, presented his first report on Railways to Sir Charles Wood, Secretary of State for India. This was prepared from information received. In it he stated that the 5 ft. 6 in. gauge had been finally

adopted, and that the rate of exchange had been fixed at 22*d.* per rupee. The 99 years' guarantee, which it had been finally decided to grant to Indian Railway Companies, applied to all monies paid into the Government Treasury and expended with the sanction and approval of the Government; on the closing of the capital account the surplus subscribed was to be returned to the Companies. Whenever the profits were less than the guarantee of 5 per cent., the Government had to make it up; any surplus was to be equally divided between the Companies and the Government, and when the amount so received covered all that the Government had disbursed (*plus* simple interest), the whole of the profits were to go to the Companies; the railways might be surrendered for actual cost at 6 months' notice; the Government having the option to purchase after 25 or 50 years at the mean value of the shares during the previous three years, taking over the rolling-stock at a valuation or, as an alternative, they could pay a corresponding annuity; land was given free. Sir Juland stated that the experiment of direct Government construction had been sanctioned for a line from the Iron Works recently established at Naini Tal, to join the East Indian or Oudh and Rohilkhand. The Superintendent, Mr. Sowerby, was of opinion that the cast-iron rails which he was able to turn out might be advantageously used, at a saving of Rs. 13,900 per mile. Allusion is also made in the report to Light Railway and Tramway lines, and it is stated that Col. H. Barr, of the Bombay Army, had received permission to spend £300 in conducting experiments to prove the value of a danger fog-signal which he had invented. On the map attached to the report the following lines are shown as "suspended," *viz.*,—Amritsar to Delhi, Jubbulpore to Allahabad, Kooshtea to Dacca, Sholapore to Bellary, and Salem to Ramnad.

In the next year's report (1860-61), Sir Juland states that the Oudh Railways were stopped, the Secretary of State having decided not to guarantee the capital for any new undertaking, the rupee having risen to 24*d.* The Governor-General consequently reported that construction should go on by all means on the lines already sanctioned, but that no more works would be commenced till those in hand were completed. The urgent need for feeder roads was beginning to be realized, and the Madras Government had determined to build 1,083 miles of them. A letter is noted from Mr. W. B. Wright, the Locomotive Superintendent of the Madras Railway, in which he says:—"I have one native, by name Gunnagee Row, whom I think competent to drive a locomotive, but his own want of self-reliance precludes him from being intrusted with the charge of one." He further states that, the apprentice system has now on the whole been attended with marked success, and that India must become the nursery for further requirements. Sir Charles Wood, then Secretary of State, wrote to the Government of India that he awaited with interest the result of the trial it was proposed to make of a cheap description of tram-road on some short feeder of considerable traffic.

The first portion of the following important lines were first opened for traffic in Lord Canning's time, *viz.*, the Bombay-Baroda and Central India proper, the Madras proper, and what is now the North-Western (State) proper, all on the 5 ft. 6 in. gauge. The metre gauge appeared for the first time on the South Indian. The average earnings of all the lines during the six years was Rs. 149 only per mile per week; the average percentage of working expenses to gross earnings was 48·75; of the net earnings to capital expended 1·19; of miles opened per annum 236 (or 1,418 in all), giving a total of 1,587 miles open for traffic. The yearly average of capital outlay was Rs. 475 lakhs (or 28½ crores in all) giving a total expenditure of Rs. 34 crores.

Lord Elgin.
1862—1863.

Sir Juland Danvers was now designated Government Director of the Indian Railway Companies and attended all their Board Meetings. His reports contained a synopsis of those received from India. In these years a good many schemes for Light Railways were launched, but did not float long. The shortage of rolling-stock, which has been perennial, was beginning to be felt, especially on the Sind line. Lord Elgin travelled by rail to Benares, and Sir Bartle Frere opened the Bhore Ghaut on April 24, 1863; 42,000 coolies had been employed on this work at one time. The Government Director reported that the number of passengers and tonnage of goods using the rail was in proportion to the inducements offered by low rates and sufficient accommodation, but that, at the same time, low rates and remunerative rates were not synonymous and that, for instance, it was doubtful, whether it was possible to carry passengers with a profit at less than ⅛*d.* per mile. Iron sleepers were first introduced and 755 miles of them were ordered. They were "Greave's" circular cast-iron bowls, and were laid down on the Punjab line, on the Eastern Bengal, and on the Madras Railway, where they did good service in all kinds of ballast, and even without any ballast at all.

The Eastern Bengal Railway, on the 5 ft. 6 in. gauge, was the only one of which any portion was first opened in Lord Elgin's time. The average mileage completed being 460 (or 920 in all), making a total of 2,507. The average earnings per mile per week dropped to Rs. 140, while the percentage of working expenses to gross earnings rose to Rs. 60·04, and of net earnings to capital 1·30. The average capital outlay was Rs. 950 lakhs (Rs. 19 crores in all), making a total of Rs. 53 crores up to date. The Tapti Bridge, 1,875 ft., the old Nerbudda, 4,688 ft., and the Soane Bridge, 4,726 ft. long were opened during this period.

Lord Lawrence.
1864—1869.

Soon after taking up the reins of office, Lord Lawrence decided that further application of the agency of Companies was undesirable; moreover, there happened to be a plethora of Government Engineers, for whom work had to be found, and although they had no experience on railways, they were put in charge of the construction then—and have been transferred on promotion ever since—from road and town surveyor's work and from the Irrigation Department, to the Railway branch. As one of them naively confessed some 20 years later, at the Society of Arts, they "had to learn

a good deal, and necessarily at the expense of the State." The Governor-General sent home a despatch embodying his views, but Sir Stafford Northcote did not adopt them entirely, for he considered that "commercial" lines should be built as heretofore, leaving "political" lines to be constructed by the State, for which purpose a fixed annual charge would be made. Lord Lawrence dissented and before he left India he submitted a minute virtually stopping any new guarantee, recommending State construction, and the withdrawal of all initiation and practical direction of measures from the India Office. In his opinion 3¾ millions sterling could be invested in railway extension every year, and in twenty years the yearly charge would be reduced to one million. He estimated that the gross average earnings would reach £30 per mile per week by 1889 (this they have never done), and considered it would be a mistake to reject the narrow gauge. In the same year the Secretary of State entered into new agreements with the Great Indian Peninsular, and the Bombay-Baroda and Central India, without consulting the Government of India, who protested—but too late. The first unguaranteed railway, 23 miles long, from Nalhati to Azimgunge, was opened by the East Indian Branch Company in 1863. In 1864, the big cyclone occurred in India and caused great damage to railways, and in 1866 the terrible Orissa famine diverted funds from Public Works. In March, 1864, Sir Charles Wood issued his famous despatch, giving rules as to what should be charged to Capital and Revenue respectively. This was a bone of contention between the Government Consulting Engineers and the Agents of the Companies for years. So long as there was no chance of a surplus over the guaranteed interest, the Agents tried to charge everything to Revenue, but whenever the receipts gave signs of a possible surplus they fought tooth and nail to save Revenue as much as possible. Especially acute became these struggles as the time approached when the lines might be taken over by Government.

With the extension of railways, the want of feeder roads was felt more and more. It was during this period that the Calcutta and South Eastern was started to serve a new Port Canning on the Mutla, whereby the dangers of the Hooghly were to be avoided, and steamers were to ply to the Straits, Chittagong and Akyab. Messrs. Brassey, Wythes, and Henfrey held two important railway contracts, one from Calcutta to Kooshtea, and the other from Amritsar to Ghaziabad, but they did not make much money over them, owing to causes which affected all public works: floods, famines, the Mutiny, and the subsequent rise in the price of labour. Sir Juland Danvers again reported rolling-stock to be inadequate; that the cast-iron bowl-sleepers were answering well; that steel rails were being introduced; that feeder-roads were delayed for want of funds; that natives of India only held one per cent. of the railway stock; that the form of debenture contract had been settled; that coal cost from 58*s.* to 72*s.* a ton; that Karachi harbour should be improved; that mails only took 5 days between Calcutta and Bombay; that the Provident Fund had been established; that the Madras Railway had carried 23,000 tons of food to the famine districts, at ⅛ pie per maund per mile; that 40 inches of rain fell in two days on the Sind Railway, nearly wiping it out; that he advised the formation of a Reserve Fund for renewals; that it would cost £1,300,000 to make good flood and other damage on the Great Indian Peninsula.

The deficit in 1868-1869 stood at Rs. 166½ lakhs; but meanwhile the total trade of the country had risen from Rs. 32 to 89 crores, and more than compensated the financial loss on guarantees.

During Lord Lawrence's Viceroyalty the only railway of which a portion was first opened was the Oudh and Rohilkhand, a 5 ft. 6 in. line. The average gross earnings per mile per week were Rs. 207, a sensible advance; the average percentage of working expenses to gross capital was 54·62, also a great improvement, while the average percentage of net earnings to capital rose to 2·93; the average mileage opened during the five years was 300 (total 1,501), giving a grand total of 4,008 miles; the average capital outlay was Rs. 620 lakhs (total Rs. 31 crores), bringing the grand total up to Rs. 84 crores, or, at the present rate of exchange, 56,000,000 pounds sterling. The following bridges were opened during this period:—The Tonse, 1,194 ft.; the Jumna (Allahabad), 3,150 ft.; the old Cheyer, 3,500 ft.; the old Papagni, 1,410 ft.; the Jumna (Delhi), 2,697 ft.; the old Chitravati, 2,670 ft.; the old Penner, 1,830 ft.; the Beas, 3,828 ft.; and the Jumna (Saharanpur), 2,675 ft. long.

Lord Mayo.
1869—1872.

Under Lord Mayo the State construction of railways, mostly on the metre gauge, was encouraged in every way; the guaranteed system practically came to an end for a time, and special engineers were engaged both in England and from America to teach the Government Engineers their new duties. The authorities had been so charmed with the capabilities of the Festiniog narrow gauge line, handling mineral traffic in a mountainous country, with the load nearly all down hill, that they applied the same system on a grand scale in the plains of India, for the conveyance mostly of light and bulky produce in every direction. To facilitate this, the maximum running dimensions were enormously enlarged; a comparison of these in the proportion of the gauges shows this plainly. Whereas on the metre gauge rolling-stock 8 ft. 6 in. wide and 11 ft. in height was allowed, on the 5 ft. 6 in. gauge only 10 ft. 6 in. and 13 ft. 6 in. respectively were allowed. In proportion to the gauges, these latter wagons would have been 14 ft. wide and 17 ft. 8 in. high, whereby their capacity per foot run of train would be increased by 75 per cent. Or to put it the other way, had the metre gauge stock been restricted to the comparative size of the 5 ft. 6 in., the wagons would have been only 5 ft. 1 in. wide and 6 ft. 7 in. high and their present capacity would have been diminished by 64 per cent.

The Indian Engineering College at Coopers Hill was established in 1871, to give Civil Engineers a special training. The North-West Provinces and Oudh were again ravaged by famine in 1869; and a cyclone occurred in the same year which was almost as disastrous as the one five years previously. The most remarkable damage was that done at the Gorai Bridge, on the Goalundo Extension of the Eastern Bengal Rail-

CURZON GANGES BRIDGE.—Allahabad-Fyzabad Railway. Sinking Brick Piers during the Dry Season.

way, where one of the iron piers in course of erection (14 ft. in diameter, 45 ft. long, weighing 120 tons) was overturned and never found again, although a new pier was sunk on the same spot.

The railways, owing mainly to an absurdly high standard of construction, had cost £17,000 a mile, and the financial equilibrium having been upset by all the disasters of recent years, the guarantee system fell into disrepute, and the Government thought they could do better themselves, as money could be borrowed on easier terms by the State. Lord Mayo, though he duly appreciated the great services which the Guaranteed Companies had rendered to India, hoped to profit by their experience for the benefit of the future lines, in economy at least, if not in efficiency. Sir Juland Danvers reported that modified terms of contract with Companies had been formulated, and that the rules guiding the State were exceedingly complex. The Scinde, Punjab and Delhi Railway settled a contractor's claim of £213,598 for £45,000, at a cost of £34,000, spread over 10 years arbitration. Major Taylor, who was killed in the Naini Tal landslip shortly afterwards, introduced the American train-despatcher system on the Port Canning line, where it answered very well, as the traffic was exiguous and not tied to time particularly. It was decided to build the Punjab Northern line as cheaply as possible, on the metre gauge, and for a speed of 15 miles an hour; the Indus Valley was to be on the same gauge, although connecting two 5 ft. 6 in. lines; the Volunteer force was started; the seer was made equivalent to a kilogramme, and the Suez Canal and the Mont Cenis Tunnel were opened. Lord Mayo strongly recommended the metre gauge on the ground of economy. A Gauge Committee was appointed; Sir R. Strachey, Colonel Dickens, Sir John Fowler, and Sir Alex. M. Rendel recommended the narrow gauge; Sir John Hawkshaw estimated the cost of a light broad gauge as £800 a mile more than the narrow gauge, by choosing which Sir Douglas Fox considered that £17,000 a mile, would be saved. But the military authorities, whose views were represented by Lord Napier, were dead against its adoption. In the end the idea of confining the metre gauge to feeder lines was entirely dropped.

During Lord Mayo's Viceroyalty, which came to a sudden end in such a tragic manner, the average earnings per mile per week rose further to Rs. 265; the percentage of working expenses to gross earnings also rose slightly to 55·34, while the average percentage of net earnings increased to 3·22. The average number of miles opened was 359 (total 1,066), making 5,074 in all, the average capital outlay having been Rs. 2,00,23,000 (total Rs. 6 crores and 70,000), making Rs. 90 crores and 70,000 in all. The rate of exchange had dropped to 22½*d.*

The Sutlej (Ludhiana), 5,733 ft.; the Nerbudda, 1,052 ft.; the Tungabadra, 4,060 ft., and the Gorai, 1,759 ft. long, were the bridges opened during this period.

The Secretary of State permitted the reading of a paper by Mr. W. B. Thornton, C.B., Public Works Secretary, India Office, at the Institution of Civil Engineers, on February 2, 1873, which gave rise to an animated discussion lasting over several evenings and called the "battle of the gauges," from which, however, it was impossible to come to any definite conclusion.

Lord Northbrook.

1872—1876.

In Sir Juland Danvers' reports for this period, we find chronicled extensive floods and more famines, and that 842,696 tons of food grains were poured into the distressed districts. Sir Juland complained of the large amount of capital locked up in stores; he pointed out that Karachi harbour was of great importance, and again urged the construction of feeder roads. Out of 61,940 proprietors of Indian Railway securities only 388 were Natives; showing that the savings were either spent on jewellery, and otherwise squandered in wedding or other festivities, or that they were hoarded; while the class of money-lenders charged, and obtained with ease, one anna in the rupee per month, or 75 per cent. with very little risk.

If foreigners chose to invest their capital in works of utility to India, of which capital quite one-half was spent in India, and they were content with small profits and a comparatively low rate of interest for many years, it seems difficult how any intelligent person of any nationality whatever can justly describe these small profits as a drain on the country's wealth. Indeed it has been averred that the material gain to India in one year, due to these works of utility, is more than sufficient to cover their whole capital cost; or, in other words, that the ultimate gain to India represents cent. per cent. per annum on the capital, which gain goes mainly into the pockets of the Natives themselves.

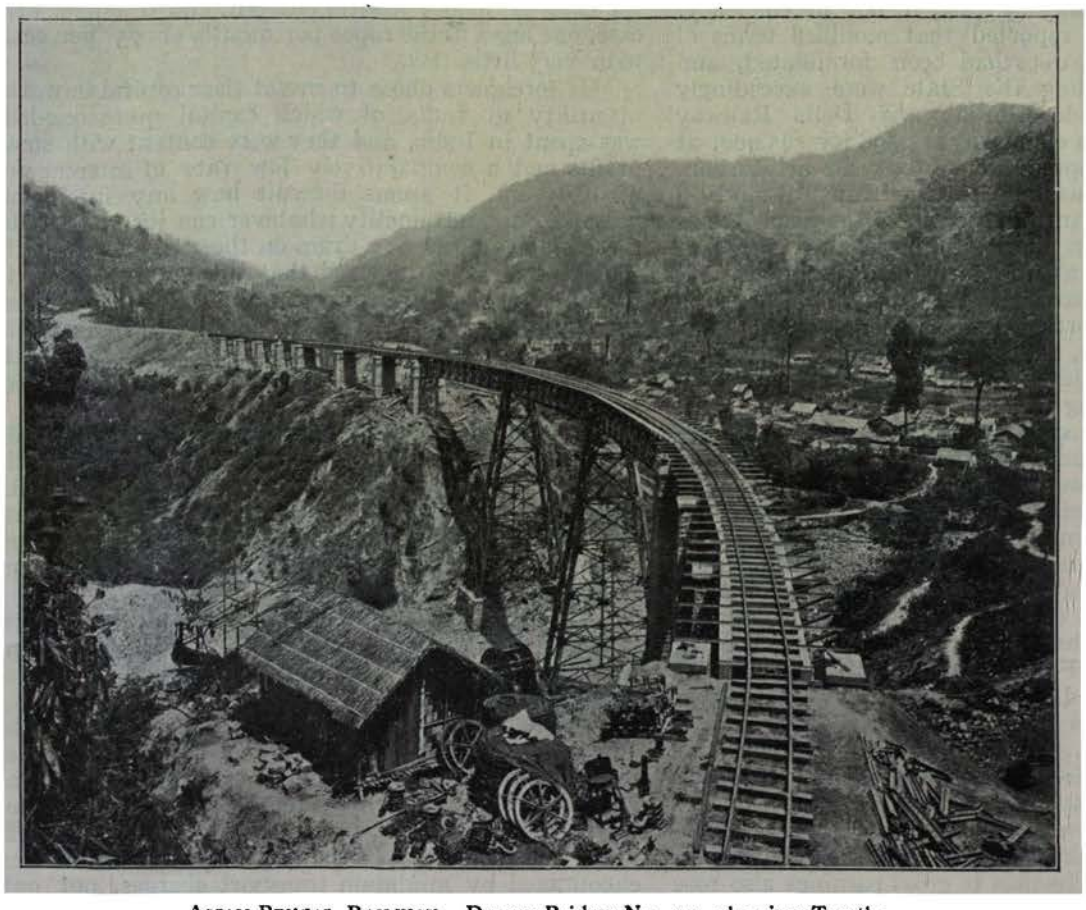
One million sterling was advanced, under certain conditions, for the Holkar State Railway; it was finally decided to build the Punjab Northern on the standard gauge as a light 5 feet 6 inches railway, and to convert the Indus Valley to the same gauge. In Rajputana a station-to-station rate was tried for a short time.

In 1875, Rs. 4 crores were allotted, mostly for railways, but war and famine intervened as usual, and reduced the funds available, and nearly all the money was spent in the above conversion.

Quite a crop of reports appeared: Sir Alexander Rendel reported that the high cost of working Indian railways was due to insufficient loading of wagons. This is partly explained by the amount of empty running which, of course, brings down the average load very considerably. If the small upward traffic were encouraged by minimum transport charges, not only would the average loads be raised, but also the receipts per wagon mile; and, moreover, in cases, where ships have to call in ballast for homeward cargoes they would be encouraged to bring more imports. This would have a tendency to lower freights all round and further encourage traffic. These points have not received much attention.

Sir Bradford Leslie reported in favour of the system adopted at the Punjab bridges, of protecting them with stone deposited in the river, which as it subsides is kept up to a certain height until, in course of time, it forms a continuous submerged weir across the river with a long down stream apron. The piers being single cylinders it matters not what course the water takes in flowing under the bridge. These Punjab structures have very shallow foundations and Sir Bradford's advice was

not followed by the Government engineers, who built piers of every shape, except the cylindrical, and depended on the enormous depth to which they were sunk as a protection against scour. The practice was also adopted of confining the river within very narrow bounds and of forming very long protecting banks. All this was costly in the extreme in the first instance and, as the protecting banks are maintained out of revenue, no statistics are available showing what they have cost since they were put down. As the large bridges are very long and very numerous in India, their maintenance must be a very serious drain on the revenue.



ASSAM-BENGAL RAILWAY.—Dyung Bridge No. 134, showing Trestle.

Col. F. S. Taylor, R.E., reported on the so-called "Goalundo Spur." The Eastern Bengal Railway had been extended to the junction of the Ganges and the Brahmaputra, and arrangements had been made at great expense for dealing with the traffic coming down both rivers. At the junction of the rivers the Ganges took a sweep to the North and ran right round a promontory, before falling into the larger river. On this promontory, which showed indications of being composed entirely of hard clay, the railway station, bungalows, river sidings, etc., had been laid down, as the shape of the land had not altered for many years. However, with the Ganges in flood and the bigger river low, a tremendous current swept by the right bank and began to erode the nose of the promontory. Stone was thrown in, which at once aggravated the erosion and the scour, and eventually two deep bays were formed, one by the direct current above, the other by the back water below, until the promontory assumed the form of a spur or pier 800 feet long, in 80 feet of water, made up of stone and brick blocks. The rivers were kept at bay for two years, at a cost of nearly 20 lakhs of rupees and when the fight ceased, by command, the rivers cut through the root of the spur and in 24 hours what had been the right bank of the river became its left shore. These cases illustrate some of the extraordinary difficulties which have enhanced the cost of Indian Railways.

Sir Guildford Molesworth wrote a report on Indian Railways.

At the Society of Arts in London Col. A. Romain Wragge advocated the use of condensed peat fuel.

A Director-General of State Railways was appointed in 1874.

During Lord Northbrook's rule, parts of the following lines were opened for traffic for the first time, *viz.*: 5 feet 6 inches or "Standard" gauge, the Nizam's; metre gauge, the Rajputana-Malwa and the Tirhoot; 2 feet 6 inches gauge, the Gaekwar's Dabhoi. The average gross earnings per mile per week fell to Rs. 51·41, while the percentage of net earnings to capital outlay rose to 3·90. The average miles opened increased considerably, to 489 (total 1,467) bringing the grand total to 6,541, while the average capital outlay was Rs. 2,73,90,000 (total Rs. 10,95,58,000), making a grand total of nearly 101 crores of rupees. The Tapti, 2,556 feet; the Kistna, 3,855 feet; the Gumti (Jaunpur), 1,472 feet; the Ramgunga (Bareilly), 2,277 feet; the Ganges (Rajghat), 3,040 feet; the Ravi (original), 3,217 feet; and the Ganges (Cawnpur), 2,850 feet long, were the bridges opened during this period.

LORD LYTTON.
1876—1880.

Major-General J. S. Trevor, Director-General of State Railways, issued his first Report on the lines under his charge, from the beginning to the year 1879-80. This work was printed in Calcutta, covered 345 pages of foolscap size and contained 7 maps.

He stated that in the 10 preceding years 2,500 miles of State Railway lines had been opened, and that 1,500 were under construction, the total cost having been Rs. 2,633 lakhs; 1,351 miles were required to connect the Punjab and Sind, to reach Peshawar, and for Frontier lines, all on the standard gauge. At the site of the Attock Bridge over the Indus there had been a flood 150 feet deep and the traffic at Sukkur over the same river was being taken across by a wagon ferry, by which even locomotives had been crossed with very few accidents indeed, although the current was very rapid and the great whirlpools and eddies very dangerous. To facilitate the lowering of a locomotive on the pontoon a young assistant engineer greased the rails of the incline, in the temporary absence of the ferry master and proceeded to lower the engine, which took charge, crossed the pontoon and plunged into the water. General Trevor also gave full particulars of all the other State lines, mostly of the metre gauge and constructed departmentally, except in the case of the Rajputana and Scindia lines, on which contract work had been very successful; the former was expected to cheapen Sambur Lake salt in the Ganges valley. The Director-General reported that an arrangement had been made for a steam-tramway from Siliguri to Darjeeling by private enterprise. This was the present Darjeeling-Himalayan 2 feet gauge railway, for which the late Sir Franklin Prestage obtained such favourable terms, and which was a great success from the beginning, the work done by the little locomotive engines having never been beaten anywhere.

Ton mile and passenger mile statistics are given in the Report; they were first started on the Dhond-Manmad line in the year 1878-79, and have been found most useful and instructive ever since.

The Famine Commission of 1880 insisted on the importance of railways and wanted 5,000 miles urgently, while 20,000 miles would make India safe; but the Afghan war had diverted all the available funds. A Parliamentary Committee on Indian Public Works which sat in the previous year recommended that the funds to be borrowed by the Imperial Government for "Productive" Irrigation and Railway Works should be limited to 2½ millions sterling, and Lord Lytton on June 8th, 1880, proposed that light cheap lines should be sanctioned on the separate financial responsibility of Provincial Governments. In the same year Col. J. G. Medley, R.E., proposed a Clearing House, but this was considered premature, and it has never yet been established, the distances being considered too great for the working of such an establishment.

ASSAM-BENGAL RAILWAY.—Cut and Cover to Slip at No. 25 Cutting, Tunnel 1a.

The Railway Conference first met and the Provident Fund and Hill Schools were first started in 1880. This year was also remarkable for a great development of State lines and for the introduction of private enterprise in their construction. The Nizam's State Railway was also started at the suggestion of Government.

Col. W. S. Trevor in his report for 1881-1882 remarked that "on the opening of new (State) lines the staff has practically to be taught the duties required." In Chapter VI he gave a *précis* of correspondence on the subject of gauges—which began in 1841.

As illustrating some of the vicissitudes of railway making in India a summary of a portion of this *précis* will be useful. It should be premised that the Government of India decided to make its own trunk lines on the standard, and branch lines on the metre gauge. In spite of all this, it was considered by some of their advisers that the line from Karachi to Peshawar through Lahore would be amply served by a metre gauge, and strange to say, the Secretary of State assented; so the existing Lahore to Multan standard gauge line was to have a third rail or be converted to metre gauge. Lord Napier demurred to this, and only consented to the metre gauge from Lahore to Peshawar as preferable to having no railway at all. This was settled in 1871 against much opposition at home. The Duke of Argyll re-opened the question in 1873, Lord Northbrook recommending standard gauge (though with 60 lb. rails) for military and political reasons. Early in 1874 the Duke of Argyll assented reluctantly, but wanted 45 lb. rails, which was not accepted by the Government of India, and finally, Lord Salisbury in June 1875 gave way, and the standard gauge with 60 lb. rails was laid down. The railways through Central India and Rajputana (except the Agra-Gwalior) were all metre gauge. The Government and the inhabitants of Bombay had throughout strongly advocated the standard gauge from Ahmedabad northwards towards Ajmir—as Delhi is nearer to Bombay than Calcutta, and is therefore the natural outlet for that market—but metre gauge was put down. The Agra-Gwalior line was considered a military branch of the East Indian Railway, and Sindhia, who largely provided the money, was very desirous of having the standard gauge—so standard gauge it was made. It was calmly said that the opening of the Rajputana line would "give valuable experience as to the sufficiency of a metre gauge railway as a *trunk line of communication.*"

The output of coal in India in 1880 was a little over a million tons, while 683,768 tons of English coal were imported. The natives were being trained in railway shops and schools all over the country, and after six years' trial on the East Indian Railway, drivers and shunters were favourably reported on, Rs. 16 lakhs having been saved through their employment during that period.

The line from Ruk to Sibi—133½ miles—was laid in 101 days, with material drawn from all parts, in spite of cholera and want of water; it was found most useful after the Maiwand disaster, for one single train did in one day what would have taken 2,500 camels to do in 14 days.

The East Indian Railway was purchased from January 1, 1880, the State accepting each £100 share as equivalent to £125 in terminable annuities or East Indian 4 per cent. paper, which was the most popular; the Company to work the line on agreed terms.

While Lord Lytton was Viceroy, the average gross earnings per mile per week reached Rs. 281. The average percentage of working expenses to gross earnings again fell to 48·89, and the average net earnings reached 5·06 of the capital outlay—topping the 5 per cent. for the first time, and since then it has never dropped below this. The average length of miles opened rose to 524 (total 2,621), making 8,996 in all; while the average capital outlay amounted to Rs. 5,52,13,000 (total Rs. 27,60,63,000), or a grand total of Rs. 128,56,90,000. Portions of the following lines were opened for the first time during this period, *viz.*, standard gauge, Bengal-Nagpur, Indian Midland; metre gauge, Behar line of the Eastern Bengal (State), Bhavnagar-Gondal-Junagad-Porebunder, Burma proper, Pondicherry; 2 feet gauge, Darjeeling-Himalayan.

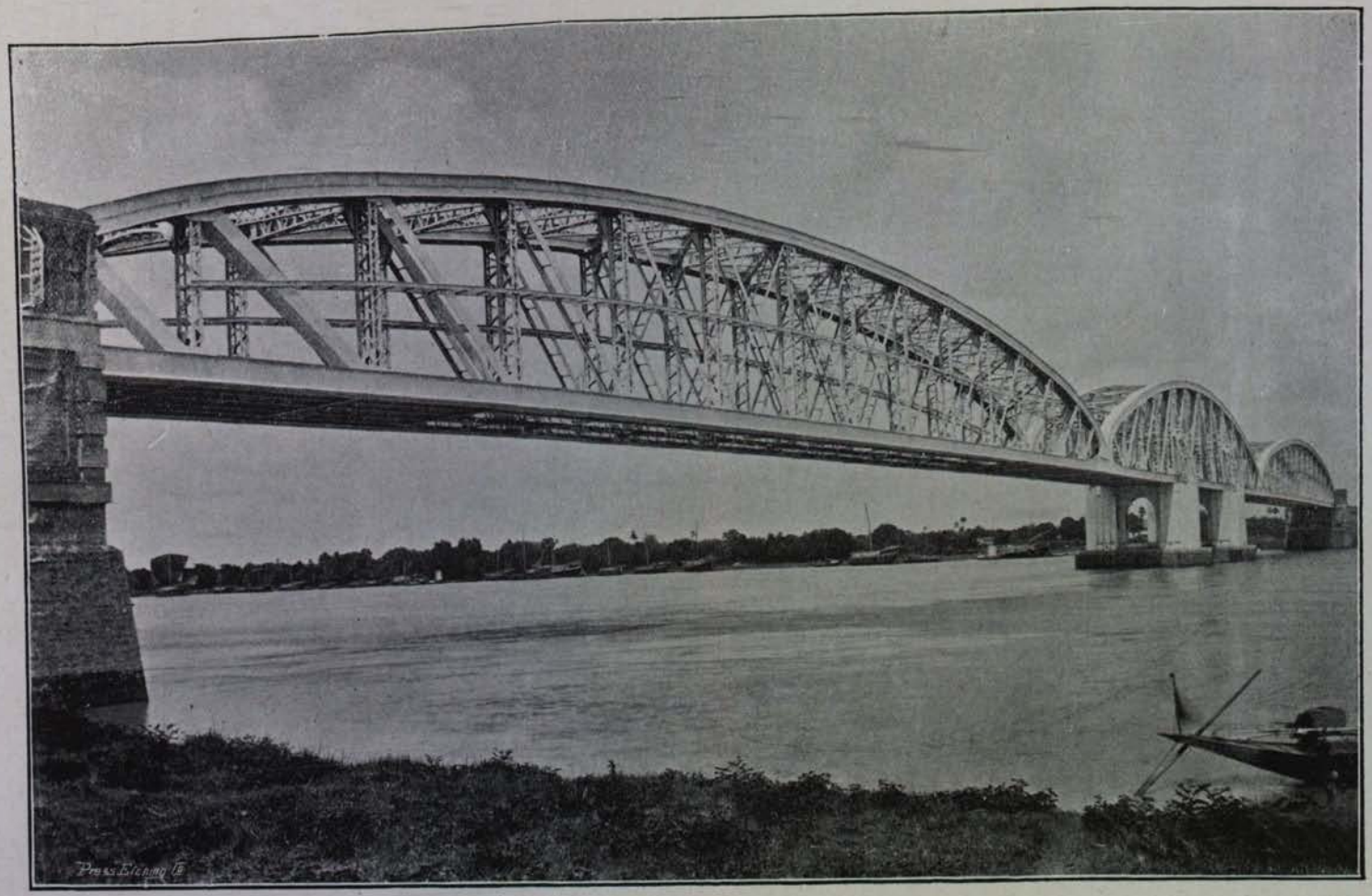
The Alexandra (original), 9,088 feet; the Jhelum (original), 1,880 feet; the Jumna (Agra), 2,272 feet; the Nerbudda, 2,836 feet; the Hagari, 2,396 feet; the Empress, 4,210 feet; and the new Cheyer, 3,500 feet long, were the bridges opened during this period.

Lord Ripon.
1881—1884.

In September 1880 and January 1881, the Duke of Devonshire (then Lord Hartington) recorded his opinion that the time had come for reverting to private enterprise. The new Governor-General went in strongly for famine protection lines, and was well supported by his Financial adviser, Lord Cromer (then Sir Evelyn Baring), who, in March 1881, stated that 2½ millions were quite inadequate and that he looked to English and perhaps Native capital to supplement that amount. "Partly aided" lines were proposed by India, but did not meet with favour at the India Office, and so the subject was bandied to and fro. From March to July 1884 another select committee sat and made certain recommendations which the Secretary of State adopted, generally, in November; 350 lakhs were to be borrowed annually, the Indian Government having made a forecast for the next six years. They strongly condemned the Secretary of State's persistent efforts to force the metre gauge on trunk lines, and were supported in this view by the State and the Committee. Meanwhile, the Eastern Bengal had been taken over by the State and the Rajputana-Malwa had been made over to the Bombay-Baroda and Central India on a lease; the Southern Mahratta was to belong to the State, while a company worked it and furnished the funds, under a 4 per cent. guarantee for 7 years, and 3½ per cent. after that, with a quarter share of profits. The Bengal and North-Western was to have no guarantee and the Government were to share any profits over 6 per cent. The question of competitive rates was raised in 1881 and is not settled yet.

Sir Juland Danvers submitted his last report in 1882, and for two years previous an Indian Administration Report was also issued in two parts, the second containing statistics only. The first part with all the maps and diagrams was reprinted in England and issued as a Parliamentary Paper, for many years.

After the Tay Bridge disaster, a Railway Structure Commission on Wind Pressure was appointed, consisting of Sir William Armstrong, W. H. Barlow, Sir John Hawkshaw, Prof. G. G. Stokes, and Col. Yolland. They reported on May 20, 1881, that a wind pressure of



THE "JUBILEE" RAILWAY BRIDGE OVER THE HOOGHLY RIVER.—Built by Sir Bradford Leslie, K.C.I.E.

from 30 to 40 lbs. per square inch would be sufficient to overturn railway carriages; and that if a pressure of 56 lbs. were provided for with a factor of safety of 26 or 28 lbs., all danger would be avoided.

In Lord Ripon's time the average gross earnings per mile per week reached their maximum up to that time, *viz.*, Rs. 289. The average percentage of working expenses to gross earnings also rose a little to 40·68, a figure it has never reached since then: while that of the net earnings to capital outlay showed a considerable rise to 5·32. The average number of miles opened per annum was 617 (total 2,469), a considerable rise, the grand total reaching 11,527 miles. The average capital outlay was a little over Rs. 672 lakhs (total nearly Rs. 27 crores), while the grand total was nearly Rs. 155½ crores.

Portions of a great number of lines were first opened during this period, *viz.*, standard gauge, Bhopal-Itarsi, Rajpura-Bhatinda; metre gauge, Bengal and North-Western proper, Deoghur, Dibru-Sadiya, Ledo and Tikar-Margherita colliery, Jodhpur-Bikaner, Rohilkhand and Kumaon proper, Lucknow-Bareilly, Southern Mahratta proper, and Mysore Section; 2 ft. 6 in. gauge, Eastern Bengal (State) branches, and 2 ft. gauge, Jorhat State.

The Nerbudda (new), 4,688 feet; the Attock, 1,522 feet; another Nerbudda, 2,306 feet; the Jumna (Muttra), 1,146 feet; the Kistna (Bijapur Branch), 3,392 feet; and the Bhima, 2,342 feet long, were the bridges opened during this period.

Lord Dufferin.
1885—1888.

The Bengal-Nagpur in 1883 and the Indian Midland in 1887 were started with a permanent (Sterling) guarantee of 4 per cent. and a subsequent quarter share of profits.

During 1885 the trouble on the frontier diverted funds from the commercial and protective railways to costly military lines, which were never expected to earn any direct profits.

In 1886, the Scinde, Punjab and Delhi was taken over by the Government and merged in the North-Western; the whole of the company's officers were retained, except those of the Engineering Department, only one Assistant Engineer being kept on.

It was in this year that 14,500 miles of railway track in America were converted to the 4 ft. 8½ in. gauge in two days. A great deal of the rolling-stock had previously been made interchangeable and the preparations for the conversion had taken a long time and caused some inconvenience. Including all gauges the total mileage opened in India at that time was under 12,000. Sir Theodore Hope, the Public Works Minister at this time, pointed out the evils of the London Stores Department, and that the uncertain supplies of funds and material were most wasteful and unbusinesslike. As to funds, the Government were embarrassed by famines, by a possible war with Russia, and by the continuing fall in exchange; as to the London Stores Department, it has gone on to this day on the old lines, discouraging the Indian firms, who were quite ready to supply materials direct and to submit to any inspection considered necessary. But no inspecting officers were appointed in India, and the old sickening delay and uncertainty of delivery continued to hamper the engineers and to add enormously to the cost of works. The Secretary of State in July 1886 warned the Government of India not to increase the taxation for railway construction. In spite of all these difficulties the average number of miles opened during Lord Dufferin's Viceroyalty increased to the highest up to that date, *viz.*, 736 per annum (total 2,945), making a grand total of 14,525 miles open; earnings per mile per week dropped to Rs. 273, nevertheless, the average percentage of working expenses to gross earnings also dropped to 49·07, and that of the net profits to capital outlay rose to 5·40, a record up to then. The average capital outlay per annum was nearly Rs. 940 lakhs (total over 3,759 lakhs); the total outlay rising to Rs. 19,304⅓ lakhs. Portions of the following lines were first opened during this period, *viz.*, standard gauge, Tarkessur; metre gauge, Gaekwar's Mehsana, Eastern Bengal (State), Dacca Section; West of India Portuguese, Morvi and Thaton-Duyinzaik (Light). The Oudh and Rohilkhand was taken over in 1889.

The Solani, 1,750 feet; the Rapti, 1,445 feet; the Jubilee, 4,932 feet; the Ganges (Balaweti), 7,886 feet; the Kanhan, 1,237 feet; the Kaiser-i-Hind, 4,293 feet; the Victoria, 2,720 feet; the Dufferin, 3,507 feet; the Gandak, 2,176 feet; the Jumna (Kalpi), 2,626 feet; and the Kistna (Poona Branch), 2,340 feet long, were the bridges opened during this period.

Lord Lansdowne.
1889—1894.

In October 1889, the Government of India submitted a programme of extensions to the Secretary of State. In November, Lord Cross advised that private enterprise should be encouraged in the construction and working of railways, and he endorsed the opinion expressed in 1884 on the subject of gauge; trunk lines should be of standard gauge (by this time this had become impossible); metre gauge should be confined to extensions and branches of the present metre gauge lines or to cases where the traffic would be so light that the broader gauge would be too expensive, although such traffic as offered would have to suffer the "undoubted disadvantage" of a break of gauge. The Governor-General, however, disapproved of the Secretary of State's financial proposals and considered it would be better to ncrease his borrowing powers—he proposed another Railway Commission. In 1889 a second battle of the gauges was fought at the Institution of Civil Engineers, with the result that the various advocates of standard, of metre, and of other gauges, alone or mixed, remained unconverted, so that the Government was left without any guidance. It was, however, clearly shown that a really light railway had never been constructed in India. Until 1890 the area served by the metre gauge lines was fairly well defined, but after that the gauge which was fixed upon for use on feeders was used for lines competing with the standard gauge. In 1890 the whole available balance of the Famine Insurance Fund was devoted to railways.

When the South Indian was taken over by the Government, the Secretary of State made a 20 years'

contract with the Company, in November 1890, to work, manage and maintain the lines; a million sterling was to be raised (reckoned to be equivalent to Rs. 140 lakhs). The first charge on the receipts was to be 3 per cent. for three years; after that 3½ per cent.; the second charge was to be 3 per cent. on the Government's capital outlay; the surplus to be divided in proportion to the capital found. At the end of the contract the capital was to be repaid in sterling in London, at par. Lord Cross in February 1890 again praised the "Company" system, and the Government of India replied in October, repudiating any leaning either way.

In 1892, rupees half a crore were lent to the Companies for extensions. In 1893 a subsidy was offered,

Portions of a great number of lines were opened, *viz.*, standard gauge, Godra-Rutlam-Nagda, Petlad-Cambay (Anand-Tarapur Section), Delhi-Umballa-Kalka, Madras (North-East line), Bezwada Extension, Jammu and Kashmir (Native State Section); metre gauge, Palanpur-Deesa, Bengal-Dooars proper, Jetalsar-Rajkot, Jodhpur-Bikaner (Bikaner Section), Jodhpur-Hyderabad (British Section), Guntakal-Mysore Frontier, Hindupur (Yesvantpur-Mysore Frontier), Kolhapur, Mysore-Nanjangud; 2 ft. 6 in. gauge, Cooch Behar, Powayan (Light); 2 ft. gauge, Dandot (Light).

The Weinganga, 450 feet; the Sheonath (No. II), 2,250 feet; the Betwa, 2,166 feet; the Ken (Banda), 1,558 feet; the Betwa (Lalitpur), 1,446 feet; the

THE LIEUTENANT-GOVERNOR'S TRAIN ON CHINBATTI LOOP OF THE DARJEELING-HIMALAYAN RAILWAY.

a rebate on 10 per cent. of the interchange traffic; this was estimated to yield 4 per cent., but these terms were strictly adhered to in the case of the Ahmedabad-Parantij only.

In these years the average receipts per mile per week fell considerably, to Rs. 256, and yet the average percentage of working expenses to gross earnings diminished also, being 48·32 per annum, while that of the net earnings to capital outlay receded to 5·28. The average capital outlay per annum was well over Rs. 8 crores (total Rs. 40 crores, 13½ lakhs), the grand total being Rs. 233,17,87,000; or at 16*d.* to the rupee, well over 1,554½ millions sterling.

Lansdowne, 1,520 feet; the Penner (new), 1,830 feet; the Eeb, 1,461 feet; the Damoodar, 2,664 feet; the Shersvat, 3,650 feet; the Chitravati (new), 2,670 feet; the Barakur, 1,850 feet; another Penner, 1,740 feet; the Chumbal, 2,714 feet; the Alexandra (reconstructed), 3,976 feet; the Papagni (new), 110 feet; and the reconstructed Ravi, 1,465 feet long, were the bridges opened during this period.

The Lansdowne Bridge at Sukkur, over the Indus rapids, was constructed by the Resident Engineer, Mr. F. E. Robertson, C.I.E., without any staging or false work, and with only one assistant, an Eurasian.

Lord Elgin.

1894—1898.

In April 1898 the late Mr. Horace Bell read a paper, at the Society of Arts, London, in which he mentioned the fact that, as 6,000,000 people were being relieved, there were no funds available for Railways, and that of late years private enterprise had practically been discouraged, although no other field for investment was as safe and certain as that of Indian Railways. The discussion that followed showed in a remarkable manner the divergent opinions held by high officials, past and present. The word "assisted," said Mr. Bell, seemed to have been invented to screen the fact of guarantees, to which Colonel Marryat added that while Government 3 and 3½ per cent. rupee-paper was at par and while money in the bazar fetched 15 per cent., an offer of 3 per cent. guarantee was absurd.

Mr. Bell pointed out that Japan had done four times better than India in Railways, in proportion to their respective populations. Although he had been Consulting Engineer to the Government of India, or, perhaps, because of that fact, Mr. Bell advocated the abandonment of the State Administration. He urged that the Government should only control and inspect railways, and that large systems were a mistake, in India at any rate, with their hordes of more or less inefficient and unreliable employees and in the trying climate. Sir Richard Strachey, on the other hand, considered big systems beneficial, but agreed that Government control should not extend to petty matters. On this, Sir J. A. Baines observed that, with these enormous interests and these enormous armies of employees under State Agency, either political or pecuniary corruption was certain to arise. The Chairman, the late Mr. J. M. McLean, M.P., alluded to the large number of Royal Engineers in the Railway Department and said that it was not likely they would willingly let go their hold. It has very justly been pointed out that a Royal Engineer in the Public Works Department, as a rule, received more pay than the officers of the Corps who stuck to their military duties, and more than the Civil Engineers in similar offices. So that the R. E. was rewarded for becoming less efficient as a military man and for learning work at the public expense, for which civilians had undergone a life long training at their own expense. The Chairman also considered the metre gauge a "colossal blunder," while Sir Owen T. Burne asserted that Lord Mayo only intended metre lines as feeders, and Mr. W. Martin Wood had recorded an opinion that they were lighter, more compact, and more economically worked than the broad gauge. According to Sir Juland Danvers, railways, being commercial concerns, were better in the hands of those who could manage them on commercial principles.

In this year, Government, finding that previous terms did not attract capital, revised them and offered those which Colonel Marryat characterized as "absurd," *viz.*, a 3 per cent. guarantee or a rebate limited to 3½ per cent. These proved no more attractive than the previous ones, and it was found that the method could not be relied upon for a steady supply of funds. The attempt to finance through the District Boards having also failed (only 158 miles having been constructed in Bengal), Government had to find funds out of their own resources. Meanwhile but little money had been available for expenditure on open lines, which were consequently starved. So in 1895, the East Indian Railway was allowed to get an Act of Parliament authorizing the raising of capital for construction and equipment. Sanction was given to spend Rs. 29 crores in 3 years—but famine, frontier wars, and falling exchange again intervened and prevented this; the East Indian Railway Act becoming inoperative.

Since 1896 all expenditure on Guaranteed and State lines has been included in the Railway Programme. In 1897 the Railway Branch of the Public Works Department was reorganized, it having been found that the subordination of the Department to a Civilian Member of Council did not adequately provide for a final expert authority. So a Secretary was appointed, with three expert Deputies as Directors of Traffic and of Construction, and an Accountant-General.

During the five years of Lord Elgin's reign, the average gross earnings per mile per week were Rs. 249, a slight fall. Although the average percentage of working expenses to gross earnings per annum was improved to 47·43, that of net earnings to capital outlay did not respond and fell a little to 5·20. The average number of miles opened also fell to 707 (total 3,536), giving a grand total of 22,024 miles. The average capital outlay per annum increased greatly, to Rs. 11,78,29,000 (total Rs. 58,91,43,000), making a grand total of considerably over Rs. 292 crores.

Portions of a great number of lines were opened for the first time, in spite of all difficulties; they were:—standard gauge, Nagda-Ujjain, Tapti Valley, Bhopal-Ujjain, Bina-Goona-Baran, Kolar Gold Fields, Southern Punjab; metre gauge, Ahmedabad-Parantij, Mymensingh-Jamalpur (Jagannathganj Branch), Cawnpore-Burhwal, Assam-Bengal proper, Dhrangadra, Jamnagar, Karaikkal-Peralam, Tanjore District Board, Udaipur-Chitor; 2 ft. 6 in. gauge, Rajpipla, Barsi Light (it had taken 14 years' hard work to get this well-paying line sanctioned, although the only concession was free land), Tarakeshwar-Magra (Light), Tezpore-Balipara (Light); 2 ft. gauge, Howrah-Amta (Light), Howrah-Sheakhala (Light).

The Ramgunga (Moradabad), 2,126 feet; the Kistna, 3,684 feet; the Jhelum (reconstructed), 4,899 feet; the Rushu Kuliya, 1,598 feet; the Penner, 1,990 feet; and the Elgin, 3,695 feet long, were the bridges opened during this period.

Lord Curzon.

1899—1905.

The closing of the Mints enabled allotments to be increased, but the Gujerat and Deccan famines in 1899-1900 again caused curtailment, so that the position became unbearable—for either the construction of much needed new lines, or the ordinary development of old lines, had to be stopped, and the traffic baulked in every way. So, as usual, a middle course, sufficient for neither needs, had, perforce, to be taken. The needs of open lines, which have never been fully satisfied, were considered a first charge—but it is evident that these needs increase with the increase of mileage open, as well

as by the constant development of the traffic and by increasing wear and tear of permanent-way and rolling-stock. So that, were the yearly sum allotted a fixed one, new lines would, in time, cease to be constructed long before the total of 60,000 miles even now considered necessary would be completed. However, during the last five years of Lord Curzon's viceroyalty, the financial condition of the country improved yearly, so that for 1906-7 a record allotment of Rs. 15 crores (10 millions sterling) was reached. A three-years' programme, including 13,000 miles of new lines, is now being worked out, and the sensible course has at last been taken of allowing lapses of one year, up to a limit of Rs. 50 lakhs, to be re-allotted to the next.

After 1899 the Administration Reports were all printed in India, and in that year the first "History of Railway Projects in India" appeared. The next year the two parts were merged into one, and the report was very much abridged.

The late Mr. T. Robertson passed two cold seasons in India and reported in 1903 on the Indian Railways at Lord Curzon's request. He recommended the formation of a Railway Board, and in March 1905 this was constituted: Mr. Robertson also made many other recommendations, some of which are being carried out.

There was a large amount of work done in Lord Curzon's time. An average of 1,043 miles of line per annum were opened and 6,255 in the six years, bringing the grand total up to 28,295 miles. In spite of this great accession of new lines the average gross earnings per mile per week rose to Rs. 295, while in 1905 they were Rs. 283, or nearly £20. This, of course, compares very unfavourably with the earnings of the home railways and yet, in spite of all these drawbacks, the average percentage of working expenses to gross earnings was but 47·72 per annum, and that of the net earnings to capital outlay as much as 5·36 per annum, while in 1905 it rose to 5·92 per cent, a result at which most railway undertakings in the world would only be too delighted if they could arrive. The average yearly capital outlay was Rs. 1,069¼ lakhs, or Rs. 7,484¾ lakhs in all, of which no less than Rs. 14,07,99,000, or close upon ten millions sterling, were spent in 1905. This brought the grand total of the capital outlay to Rs. 3,66,93,94,000, or £244,626,267, yielding 6 per cent. per annum. The North-Western Railway which for many years was a very poor-paying line, has now become one of the chief contributors to this splendid result, since the opening of canals along the Upper Indus.

The lines of which portions were opened during Lord Curzon's reign, were as follows, *viz.*:—standard gauge: Petlad-Cambay (Tarapur-Cambay Section), South Behar, Agra-Delhi Chord, Ludhiana-Dhuri-Jakhal, Southern Punjab (Ludhiana Extension), Hurdwar-Dehra (this exceedingly useful line was discussed for ten years); metre gauge, Ahmedabad-Dholka, Jaipur (Siwai-Madhopur), Vijapur-Kalol-Kadi, Nilgiri, Shoranur-Cochin, Hyderabad-Godavari, Noakhali (Bengal), Bengal Dooars (Extension), Tinnevelly-Quilon (Travancore, British Section), Tinnevelly-Quilon (Travancore, Native State Section), Bellary-Rayadrug, Birhur-Shimoga, Hospet-Kotlur; 2 ft. 6 in. gauge, Jubbulpore-Gondia (Extension, Bengal-Nagpur Railway), Mourbhanj, and Parlakimedi (Light), Raipur-Damtari (branch Bengal-Nagpur Railway), Tirupattur-Krishnagiri, Kushalgarh-Kohat, Nowshera-Durgai, Baraset-Basirhat (Light), Buktiarpore-Behar (Light), Cutch State, Kalka-Simla; 2 ft. gauge, Gwalior (Light). The Great Indian Peninsula was taken over in 1900.

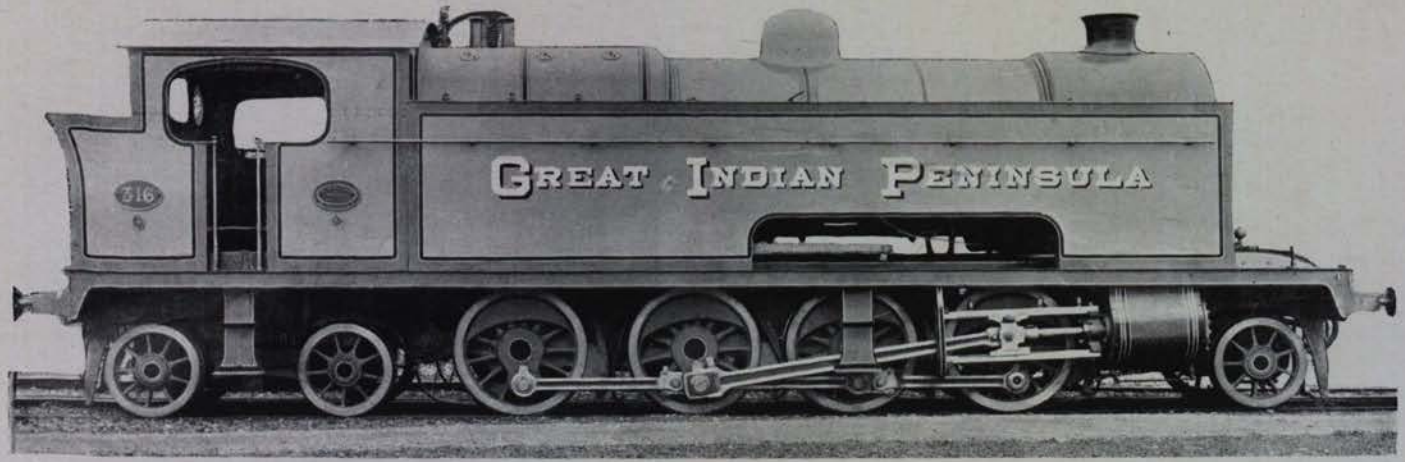
The Phulgee, 2,064 feet; the Subanrika, 1,908 feet; the Byturney, 2,400 feet; the Brahmini, 4,640 feet; the Berupa, 1,728 feet; the Sohan, 1,204 feet; the Barah, 1,368 feet; the Sone (Dehri), 10,052 feet; Mahanadi, 6,912 feet; Kuakhai, 3,212 feet; Kathjori, 2,890 feet; Godaveri, 9,096 feet; Roopnarain, 2,632 feet; Indus (Kotri), 1,948 feet; Girna, 1,417 feet; Ganges (Gurmukhtesar), 2,332 feet; Teesta, 2,116 feet; Girna, 1,572 feet; Gokteik, 2,260 feet; Dharka, 1,620 feet; Sankosh, 1,458 feet; the Cossye, 1,736 feet; the Dehing, 1,118 feet; the Turtipur, 3,912 feet; and the Kosi, 3,173 feet long, were the bridges opened during this period.

The total trade of India in 1904-1905 had risen to over Rs. 318 crores with a balance in favour of the country of Rs. 30,21,75,000. The aggregate tonnage of goods lifted in 1905 was 54,940,000; the average rate per ton per mile for all descriptions of goods being 5¼ pie or just under ½*d*. The total number of passengers was 248,160,000. The average rate charged them for all classes being 2·47 pie per mile, just over ¼*d*., the average distance travelled being about 40 miles. In the employ of railways there were no less than 436,348 natives, only 9,175 Eurasians and 6,535 Europeans; 6,907 children, apprentices, and workmen attended the railway schools, and facilities are given for children to attend other schools. The numbers of skilled workmen who have passed through and are still in the locomotive and carriage shops is very great indeed, and the spread of technical education by these means has been most beneficial. The total output of the Indian collieries was 8,430,000 tons and only 197,750 tons of English and foreign coal were imported—of these amounts 2,760,000 and 18,230 tons respectively were consumed by the railways.

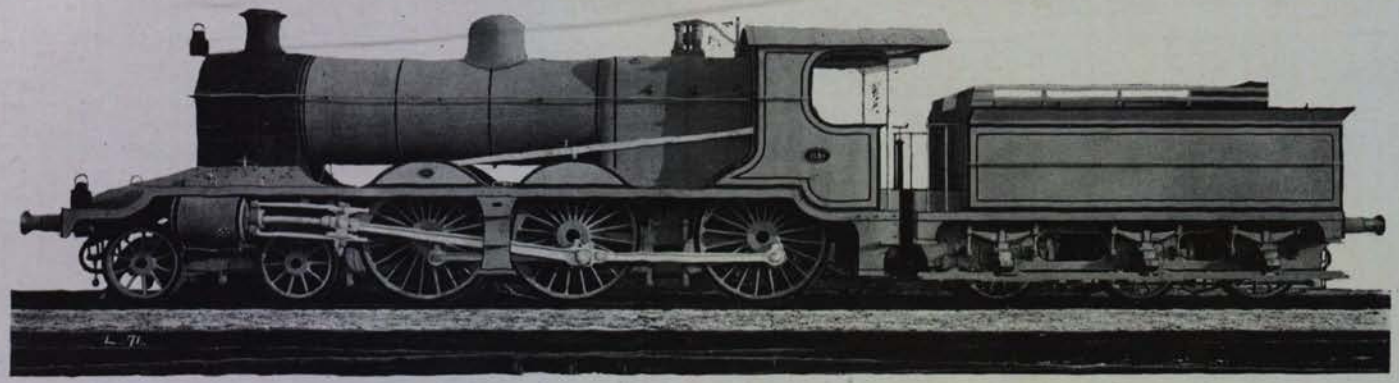
Lord Minto.
1906.

The Bombay, Baroda and Central India Railway was taken over by the State on the 1st January 1906. In 1907, the Madras Railway, the only guaranteed line remaining, was taken over by the State, and it has been decided by the Secretary of State that the junction of the reorganized railway with the Great Indian Peninsular system will be at Raichur, and that the Bengalore-Madras Section shall be worked by the Southern Mahratta line, the South Indian Railway being accorded running powers to Madras over this section. The following State lines are leased to Companies, *viz.*:—Bengal-Nagpur, Indian Midland, Assam-Bengal, Burma, Southern Mahratta and the Lucknow-Bareilly Section of the Oudh and Rohilkhand. There are six lines worked on the so-called Branch lines system; besides these there are Companies' lines guaranteed under new contracts; District Board lines; Assisted and unassisted Companies' lines, and Native and Foreign State lines; the balance being State lines worked by the State or by Companies.

TYPES OF INDIAN LOCOMOTIVES.



G. I. P. Locomotive.



E. I. R. Locomotive.

When the Nagda-Muttra line has been completed, it is considered that there will be only three trunk lines left for construction, *viz.*:—The Bombay-Sind connection; the joining of the Assam and Bengal railways, and the so-called North to South Standard Gauge railway. Another important line will be the Kundwa-Akola-Basim Railway which will similarly link up the North and South metre gauge systems. The Marwar-Kotah link will greatly benefit Karachi, where also it is proposed to form a Company for the purpose of building various light railways in the province.

At the last Railway Conference allusion was made to the simplification of the Goods Tariff—this is in hand at last and will be of inestimable advantage to trade in general. The lowering of the minimum tariff has also encouraged traders, and if railways were only allowed to take full advantage of their geographical and geological positions, and the Government could only be induced to share more of its profits with investors, railways and their consequent benefits would increase amazingly.

Coopers Hill College has been closed after a life of 35 years. It was built to accommodate 125 students and the average number has been 46. Of these 35 per cent. dropped out; 24 per cent. failed to pass the final examination, and about 40 per cent. obtained appointments. The course was very costly, as the number of professors was out of all proportion to the number of students.

The third "Battle of the Gauges" took place at the Institution of Civil Engineers in London after another interval of 16 years, when a paper by Sir Frederick R. Upcott, K.C.V.O., C.S.I., was discussed on the 30th January, 1906. Sir Frederick invited the criticism of the members on the two questions (1) whether the cost and confusion which will necessarily accompany gradual conversion outweigh the advantages of uniformity, and (2) whether the growing needs of the traffic may not be met by continuation and extension of different gauges, treating each case on its merits without attempting to define any definite scheme. The majority acquiesced in the view that a compromise rather than any drastic remedy appeared to be preferable, and Sir Frederick, as President of the Railway Board, stated that this compromise agreed substantially with the policy now being carried out by the present Government. He did not, of course, commit any future Government to the same policy.

The sum of Rs. 15 crores was provided for 1906-7, of which 891 lakhs was for open lines (Rs. 382 lakhs of this being for rolling-stock) and the balance for construction. Of this amount, Rs. 14,61,16,000 (£9,741,100), were actually expended, being nearly a crore of rupees in excess of the expenditure for the year 1905-6. At the end of April, 1906, there were 28,607 miles open and 3,297 under construction and sanctioned, total 31,914; or only a little over half the mileage considered necessary by many authorities. The amount of work done, though creditable under all the circumstances of the case, still compares unfavourably with many other countries, both as regards miles per inhabitant and per square mile of territory. On the other hand, the total trade of India had further risen in the financial year 1905-6 to Rs. 321 crores, or a ten-fold increase in less than 60 years, and showed a balance in favour of India of over 33½ crores of rupees; the enormous increase over the figures quoted before the introduction of railways being almost entirely due to their growth.

The estimate for 1907-8 provides for the expenditure of Rs. 13½ crores (£9, 000,000), a reduction of 10 per cent. on the provision of the previous year. The programme for this year, as originally framed, contemplated an outlay of Rs. 15 crores. Financial considerations, however, necessitated its reduction to Rs. 12 crores, for which figure it received the Secretary of State's sanction. It was subsequently increased by Rs. 1½ crores, thus bringing it up to its total of Rs. 13½ crores. Of this amount, Rs. 1,013¼ lakhs (£6,755,000), has been divided between general open line requirements and additional rolling-stock requirements in the following proportions:—Open lines, 445¼ lakhs; rolling-stock, 568 lakhs. The balance of the grant goes to lines under construction, for owing to the reduction in the programme, the heavy demands on account of open lines, and the large mileage of lines at present under construction, no expenditure on new lines was proposed for the year.

In their memorandum on the Budget in 1906, the Railway Board definitely stated that the then standard of equipment of Indian Railways in the matter of rolling-stock was below the requirements, and acting on this opinion they made the very large provision of 382 lakhs, as noted above, to be spent for rolling-stock during the year 1906-7, and this grant was all expended. For 1907-8, the provision of 568 lakhs which they made, met in full the demands of all railways for grants for rolling-stock for that year.

On the 1st April, 1907, there were 29,571 miles of line open, while the mileage under construction or sanctioned for construction was 2,873, making a grand total of railways completed and in hand at the commencement of 1907-8 of 32,444 miles. Compared with the results of the previous year, the revenue account for 1906-7 shows an improvement of Rs. 23,35,000 (£155,900).

The bridging of the Lower Ganges is a matter that has been before the Government of India for the past seven years, in some shape or form. The question came into being in 1890, and discussion has been going on ever since. Up to the end of 1906, the main point at issue was as to whether the bridge should be built at Sara or at Godagiri. If it were located at the first named place, it would connect the broad gauge and the narrow gauge sections of the Eastern Bengal State Railway. If, on the other hand, Godagiri were selected as the site, the bridge would connect the new broad gauge line from Ranaghat to the Ganges, with the new narrow gauge line from the river to Katihar. A third proposal was imported into the discussion by the Railway Board towards the end of 1906. It was in the nature of a compromise, and the Board held that the provision of a bridge at Sara or at Godagiri would not meet satisfactorily the full requirements of trade as a permanent arrangement. They felt confident that the building of a bridge on

one site would be followed eventually by the building of a bridge on the other; and to avoid this, and to enable the metre gauge system to enter Calcutta, they proposed to bridge the river at Rampur Boalia. A Committee, styled "The Ganges Bridge Committee," was appointed by Government at the end of 1905, to consider the various schemes, and to report on the project they recommended as offering the best settlement of the complex question of location. Their report was submitted to Government in April, 1907, and in it the Committee, for reasons set forth in full detail, came to the following conclusions:—(1) That the metre gauge ought not to be extended south of the Ganges; and (2) that the bridge should be built at Sara. The Committee further emphasised the fact that they considered the construction of a bridge over the Lower Ganges a matter of extreme urgency, and that it was the universal hope and expectation of the commercial community and of the general public that the investigation and report of the Committee would result in immediate and practical action. The report was forwarded to the Secretary of State in July, 1907, with a recommendation from the Government of India that the proposals of the Committee be accepted; and here the matter rests at present.

Among the important proposals made in 1903 by the late Mr. T. Robertson, Special Commissioner for Railways, was one for the relaxation of the stringency of the control exercised by Government over the affairs of Railway Companies. In 1904 the Secretary of State called for the recommendations of the Government of India in regard to the matter; but the formation of the Railway Board had first to be effected, and the importance and intricacy of the proposals necessitated much discussion before the case could be laid before the Secretary of State. Under arrangements hitherto existing, the control of Government has been exercised through the medium of Consulting Engineers, who in Madras, Bombay and Burma worked under the local Governments; and in the other provinces were directly subordinate to the Railway Board. Railway Companies have hitherto had no original powers of sanctions, and have had to obtain such authority from or through the Consulting Engineers. With the sanction of the Secretary of State, the Government of India have now decided that certain powers of sanction and administration should be delegated to the Companies' Boards, and that they should be requested to entrust their agents with a considerable portion of their own powers, Government reserving the right to reimpose more detailed control should the circumstances of any line require it. It has also been decided that the appointment and duties of Consulting Engineers should be abolished, and that Government Inspectors should be appointed to carry out the duties prescribed in Chapter 4 of the Railway Act. The change in organization will be brought into force from the 1st June, 1908.

A Committee has been appointed by the Secretary of State to examine into the details of railway administration and finance in India, and the members of the Committee, Sir Walter Lawrence and Sir James Mackay, accompanied by Mr. A. Brereton as a railway expert from the India Office, will arrive in this country some time in December, 1907. Their inquiry will include a report on the constitution and working of the new Railway Board.

The Geology of India.

Peninsular, extra-peninsular, and Indo-Gangetic regions.

FROM a geological point of view India is divided into three regions: (1) the Peninsular area, in which there are no mountains in the true sense newer than palæozoic, (2) the region of relatively recent mountains (tertiary in age), constituting the ranges of the Himalaya, Balúchistán and Burma, and (3) the great Indo-Gangetic alluvial plain. These divisions are intimately connected with the physiographical history of the countries that now constitute the Indian Empire. In the Peninsula all the rocks of Upper Palæozoic age, or newer, are either horizontal, or dipping at comparatively low angles. The principal type of disturbance that has affected the peninsular area during the Upper Palæozoic and later times is the formation of elongated, almost rectilinear, trough faults which are of paramount importance in the mineral resources of India, as they account for the formation and preservation of the Indian coal-basins. The central and western portion of the peninsular area is occupied by an enormous outcrop of heavy, black, volcanic rocks known as the Deccan trap. It constitutes flat-topped hills, built of piled-up flows of basaltic lava, which have remained almost undisturbed since they were erupted in cretaceous times. The faulted troughs constituting the coal-basins occupy relatively small areas, principally in the eastern and north-eastern part of the peninsular region. Outside these coal-basins the rocks constituting the peninsular area, wherever they are not concealed by the Deccan trap, are mostly of palæozoic or older age, with the exception of a fringe of cretaceous and tertiary strata at some points along the sea-coast. These later beds, found in the neighbourhood of the present sea-coast, are the only fossiliferous marine sediments of the peninsular area. The absence of such beds from the remainder of the peninsula indicates that this portion of India has been a continental area ever since the earliest geological times, and is one of the oldest land areas of the globe.

The rocks constituting the extra-peninsular area, that is the mountain ranges of the Himalaya, of Balúchistán and of Burma, contain, in addition to a substratum of rocks identical with some of the older ones of the Peninsula, numerous representatives of marine fossiliferous strata of almost every geological age, from Cambrian to Tertiary. The area remained occupied by the ocean until late in Tertiary times, when the upheaval of the Himalaya was completed.

The great Indo-Gangetic plain, which now joins together the essentially different peninsular and extra-peninsular areas, consists of alluvial soil mostly derived from the disintegration of the Himalaya, whose rapid accumulation has finally obliterated all remnants of the arm of the sea which might still have subsisted between the two areas.

The geological formations of India may be classified into the following divisions:

Recent formations.
Pleistocene.
Siwalik System (Pliocene and Upper Miocene).
Pegu or Mekran System (Lower Miocene and Oligocene).
Eocene.
Mesozoic or Secondary.
Permian and Upper Carboniferous.
Lower Carboniferous and Devonian.
Silurian, Cambrian, and Pre-Cambrian.
Oldest Sediments.
Fundamental Gneiss or Archæan.

THE ARCHÆAN.

THE Archæan, if one restricts this name to the rocks underlying the oldest undoubted sediments, consists essentially of crystalline gneissose rocks that must have solidified under conditions quite different from those that attended the formation of later rocks. These gneisses represent, in part at least, the original crust of the globe, when the surface of the originally molten mass first began to solidify.

As in other parts of the world, the Archæan system in India is largely made up of rocks whose composition and structure resemble those of the intrusive rocks of the family of the granites or diorites—granular aggregates of quartz, felspar (silicate of alumina and of alkali or lime), and various ferro-magnesian silicates, such as amphibole, mica of certain kinds, or, less frequently, pyroxene. These rocks differ from many of the true intrusive granites and diorites of later ages owing to the pronounced parallel arrangement of their constituting minerals, producing the structure known as gneissose. In addition to the parallel arrangement of the minerals within the rocks, the whole mass is often arranged in parallel layers of rapidly varying composition. In some of these rocks felspar is scarce or absent, and thus they pass from the condition of gneisses to that of crystalline schists. Amongst the most peculiar types of this class are the sillimanite schists of Orissa discovered by Dr. Walker, and named by him "khondalites" (Memoirs of the Geological Survey of India, Vol. XXXIII); also the corundum bed of South Rewa, in Central India; the manganiferous garnet-bearing schists and gneisses discovered by Mr. L. L. Fermor, and called by him the "kodurites." There are many outcrops of garnetiferous mica schists.

It is sometimes uncertain whether these schists are true members of the Archæan system, or metamorphosed representatives of some of the subsequent normal sedimentary series.

Three well-marked types have been recognized by the Geological Survey of India amongst the rocks of the Archæan. These are: the BENGAL GNEISS (Oldham, Memoirs of the Geological Survey of India, Volume I, 1859), the BUNDELKHAND GNEISS (Mallet, Manual of the Geology of India, p. 10, 1879), and the NILGIRI or MOUNTAIN GNEISS (King, Mem. G. S. I., Vol. XVI, p. 125, 1880).

Bengal Gneiss.

The Bengal gneiss is characterized by its varied composition and conspicuously banded structure. It often exhibits rapidly alternating layers of sharply contrasted composition, some of which exhibit the characters of gneissose granites and diorites, while others are more of the nature of schists. The schistose types are very numerous, including quartzose, micaceous and hornblendic schists, garnet-bearing, magnetite-bearing, sillimanite-bearing, and manganiferous gneisses and schists, such as the khondalites and kodurites already mentioned, and many other varieties.

Bundelkhand Gneiss.

The Bundelkhand gneiss, which, in its type-area, usually has the appearance and composition of a coarse typical pink granite, was once regarded as the oldest rock in India. At a time when gneisses were regarded as metamorphosed sediments, the coarseness of crystallization was thought to be related to the degree of metamorphism, and consequently to the antiquity, of the rocks. As the oldest rocks of the earth's crust must include representatives of its first definitive consolidation from its original molten condition, it is evident that the Archæan must consist largely of rocks formed under conditions different from any with which we are acquainted in the present stage of the globe's history. The Bundelkhand gneiss, when the nature and composition of the rock are considered, closely resembles an intrusive granite, but differs from undoubtedly genuine granitic intrusions owing to the enormous area which it occupies. When the Archæan rocks first consolidated, the primordial atmosphere contained in the state of vapour the totality of the water that now forms the ocean, the volatile chlorides, as well as a large proportion of the carbonic acid and oxygen that have now been absorbed by various solid rocks. It is quite conceivable that under the enormous pressure of this primordial atmosphere, molten masses may have spread out over large areas, and on solidifying assumed the granitic form which at later periods could only have been developed under similar conditions of pressure and temperature in the depths of the earth's crust. Instead of being older than the Bengal gneiss, it is quite possible therefore that the Bundelkhand gneiss may be resting on a substratum of previously solidified rocks. Much of the banded structure of the Bengal gneiss is due to the injection of molten rocks in the midst of previously solidified gneisses or schists. Some of these intrusions may be contemporaneous in age with the outflow of the Bundelkhand gneiss. Thus, the Bundelkhand gneiss, instead of being the oldest rock of the peninsula, may be newer than some parts at least of the Bengal gneiss.

Where granitoid bands of appreciable width constitute part of the Bengal gneiss, they weather into the characteristic groups of piled up blocks of huge dimensions known as "tors." The same mode of weathering affects the Bundelkhand gneiss. In its type-area, the Bundelkhand gneiss constitutes principally a plain, surrounded by cliffs of the much harder Vindhyan sandstones. This plain is traversed by great rectilinear, wall-like ribs of quartz, constituted by huge veins of that substance many miles in length. They give rise to rugged hills, imparting quite a special character to the scenery of Bundelkhand, and affording great facilities for the creation of artificial lakes.

Quartz-veins of Bundelkhand.

Lower Bundelkhand is the principal area of this form of gneiss in Northern India. The Bengal gneiss occupies large surfaces in Behár, Manbhúm, Orissa, Rewa, the Dhár Forest, and Gujrát. As regards Southern India, so far as can be made out from published accounts, the schistose gneisses that have been described as Karnatic gneiss or Salem gneiss, seem to correspond with the facies of the Bengal gneiss, while the facies of the Bundelkhand gneiss recalls that of the massive granitoid red gneiss which prevails in the upland of Southern India and has been distinguished under various names such as Bálághát or Hosur gneiss. Its eastern confines from the Palár to the Kistna are almost continuous with the edge of the ghâts, and it is typically developed in North Arcot, in the Kadapah sub-division, in the eastern part of the Bellary district, where it is traversed by gigantic quartz veins similar to those of Bundelkhand, in the Karnúl district, and thence all over the eastern portion of the Hyderabad territory up to the higher reaches of the Godávari river. It has been largely used as a building material throughout Southern India. The magnificent buildings of Vijayánagar, in particular, are constructed of Hosur gneiss.

Distribution of Bengal Gneiss and Bundelkhand Gneiss.

The Central gneiss of the Himalaya is, in part at least, of Archæan age, but in the present state of the survey cannot always with certainty be distinguished from intrusive granites of Tertiary age; neither are the available descriptions sufficient to tell whether the Bundelkhand gneiss or Bengal gneiss facies is more particularly represented. Still more scanty is our knowledge regarding the Fundamental gneiss in the Burmese and Malay region, though the system is there also represented.

Central Gneiss of Himalaya.

The gneisses constituting some of the principal hill masses of the Deccan, such as the Nilgiris, the Palnis and the Shevaroys, also closely resemble intrusive rocks except for the great dimensions of their outcrops. They are granitoid rocks of a peculiar dark-grey to black colour, and their distinctness from the other rocks of the Peninsula was first recognized by the late Dr. King, who proposed for this series, the appropriate name of "Nilgiri" or "Mountain Gneiss."

Nilgiri Gneiss.

The same rock is also observed near Madras and in the tributary mahals of Orissa, and in the districts of Ganjam and Vizagapatam. The leading features of these rocks are their dark colour and the constant

presence of the mineral enstatite (essentially silicate of magnesia). They also frequently contain garnet. Some varieties contain quartz, others do not, but even when there is a high proportion of quartz, this mineral assumes a dark bluish colour, which does not affect the general dark tinge of the rock, producing a very different appearance from that of the more familiar types of quartz-bearing rocks, such as ordinary granites and diorites. The heavier and less siliceous types of the Nilgiri or Mountain gneiss belong to the class of rocks known as "norites," while the more siliceous ones come nearer to the composition of diorites and granites, from which they differ nevertheless owing to an unusually high percentage of magnesia and ferrous oxide, and by the presence of enstatite, a mineral characteristic of rocks that have a low percentage of silica, but generally absent from the usual types of highly siliceous rocks, such as normal granites or diorites. Amongst these enstatite-bearing rocks, the types that most nearly approach a granite in composition have been called by Mr. T. H. Holland "charnockites," because the tombstone of Job Charnock, the founder of Calcutta, consists of a slab of that rock. The material is much appreciated as an ornamental stone, owing to its handsome granular appearance and dark colour.

Charnockite.

Somewhat related in composition to the Nilgiri gneiss, and perhaps belonging to the same geological system, are the anorthosites of Bengal, so called on account of their being largely made up of lime-bearing felspars related to the mineral anorthite.

Anorthosites of Bengal.

In Southern India, where the Hosur gneiss, the local representative of the Bundelkhand gneiss, comes into contact with the Nilgiri gneiss, there is some evidence pointing to their being both of about the same age, while we have the direct evidence of stratigraphical superposition to prove that the Dhárwárs, the local representatives of the oldest sedimentary system, are newer than the Hosur gneiss.

Thus, although the investigation is not yet complete, there is every reason to regard the Nilgiri gneiss as a member of the Archæan System, either of the same age as the Bundelkhand gneiss, or somewhat newer.

OLDEST SEDIMENTARY SYSTEMS.

AFTER the consolidation of the original crust of the globe now constituting the Archæan rocks, a time must have come when the temperature was sufficiently lowered for the vapours contained in the primordial atmosphere to condense and form the ocean. Subsequently to this event, the temperature of the earth's crust could no longer vary except within narrow limits, while the temperature of the inner core of the globe continued slowly to decrease, and is still decreasing at the present day. In order to adjust itself to the contraction in volume which results from this gradual cooling of the earth's interior, the outer crust became corrugated into ridges and furrows. The inequalities thus arising in the earth's figure became gradually more pronounced, and at last some of the troughs absorbed so much of the bulk of the waters, that the general level of the ocean surface sank below that of the highest ridges or bulges. In this manner the first continents appeared, and as their surface became at once degraded by atmospheric agencies, true sediments began to accumulate in the neighbouring parts of the ocean. The gradual deepening of the ocean, and the consequent expansion of the continents, by raising these earliest sediments above the sea-level, accounts for their rapid removal by denuding agencies. Consequently they have now almost everywhere disappeared, except where portions of them have been caught up amidst the folds of subsequent corrugations, such as those which accompany the formation of mountain ranges. The increased depth and thickness resulting from this compression has saved some of these folded portions from being completely removed by denudation. This is why the oldest sediments of the globe are almost entirely restricted to narrow highly compressed synclines. Consequently their outcrops assume the appearance of more or less parallel narrow elongated strips, such as is particularly well shown in the Dhárwár region of Southern India. It is the deepest parts of the original synclines that are thus preserved, precisely those parts where the combined effects of compression and heat have produced the most intense degree of metamorphism, and as this is often enhanced by the contact effects of igneous intrusions, a crystalline facies may be produced which it is sometimes very difficult to distinguish from that of certain forms of Archæan gneisses.

Amongst the most characteristic rocks of the oldest sedimentary system of India may be mentioned: hæmatite-schists, magnetite-bearing schists and massive beds of hæmatite and magnetite; massive beds of manganese ore; a great variety of more or less altered volcanic beds, largely basic; hornblendic schists, which probably represent metamorphosed volcanic flows or intrusive sills, various kinds of highly magnesian rocks, such as talc-schists, serpentinous limestones, potstones; highly crystalline limestones and dolomites, passing into scapolite-gneisses and pyroxene granulites, which appear to be the result of metamorphism from associated granitic intrusions.

Single outcrops of this ancient sedimentary series, as a rule, do not contain every one of these forms of rocks, but they always combine a sufficient variety of them to lend to the formation its characteristic facies. The bulk of the formation usually consists of a considerable thickness of slates showing every passage through chiastolite-bearing slates and semi-crystalline phyllites to typical mica schists, often with the development of andalusite and garnets. When the slates are but slightly altered, they are not readily distinguishable from those of some less ancient series of the Peninsula, the Kadapah system for instance; but they frequently exhibit the altered schistose facies over large areas with a degree of metamorphism which is only observed quite locally, if at all, amongst the rocks of Kadapah age.

Granitic intrusions, varying in size from large bosses to narrow veins, are a frequent feature amongst the outcrops of the oldest sediments. Some of the finely foliated mica schists are, as it were, impregnated with narrow strings of intrusive granitic material, the combination thus produced giving readily the impression of a gneiss.

Amongst the various rocks of the system, the massive beds of manganese ore and the still more massive iron ores are the most characteristic. Similar rocks occur in some of the divisions of the succeeding Kadapah, but never in such bulky masses. The brilliantly coloured banded jaspers are amongst the most conspicuous rocks of the oldest sediments, but they are equally well developed in the succeeding Kadapah. The crystalline limestones, which constitute ornamental stones of unrivalled excellence, are very characteristic of the older system.

Banded Jasper.

With the exception of the rather broadly spread-out exposure in Singhbhúm, all the occurrences of the oldest system exhibit, as already mentioned, the structure of groups of narrow synclines, indicating the position of old mountain ranges, most of which have been so thoroughly effaced by ages of continuous denudation, that they have lost all topographical individuality. It is only in the case of the Árávalli that they still form a very distinct geographical feature, probably because the upheaval of this range was partly renewed in later times.

It is the Árávalli range that exhibits these rocks in their greatest variety. They have been grouped into several divisions (Raialo, Ajabgarh, etc.). The continuation of the Árávalli outcrop in Gujrát is known as the Champáner series. Another outcrop, probably of the same series, occurs further east, near the town of Bágh, north of the Narbada. Still further east, further up the course of the Narbada, there are some very typical outcrops of the same system in the neighbourhood of Narsinghpur and Jabalpur. The well-known "Marble Rocks" near the latter town belong to it. Various names have been applied to different parts of this outcrop, such as Chanderdip, Majauli, Lora, but just as in the case of the names given to portions of the Árávalli range, they are also merely of local value. A further extension of this outcrop is found south of the Son in Rewa. The same rocks also constitute the Karakpur hills of Behár, where the slate beds which they contain are extensively quarried. The outcrop extending from Midnapore to Nágpur has already been noticed. In the Bálághát district, they have been described under the name of Chilpi Ghât Series. Another outcrop of the same rocks occurs in Bastar territory. In Southern India, a large number of outcrops have been described under the name of Dhárwár Series, the most famous being the synclinal exposure situated in Mysore, that contains the Kolár gold-field.

The same rocks are found in the Assam plateau where they have been described as the Shillong Series. In the Himalayan region, the same rocks are known as the Daling Series in the Eastern Himalaya, Jaunsar Series in the Chakráta region, Infra-Krol (in part) in the Simla region, Vaikrita in Spiti, Panjál (in part) in the Western Himalaya.

The same system constitutes the Miju ranges at the head of the Assam Valley, and is largely developed in Burma, where the crystalline limestones, containing the rubies and other gems, perhaps belong to this period.

Of the numerous names that have been used by Indian geologists for designating this series, the earliest in date is Champáner (Blanford, 1869), the latest and most popular is Dhárwár (Foote, 1886); the most suitable is Árávalli (Hackett, 1877), as it is derived from one of the most remarkable and one of the oldest physical features of the globe. There is super-abundant evidence that these rocks correspond with the system known in other parts of the globe as the Huronian.

Amongst the rocks that are intrusive in these ancient Árávalli or Dhárwár beds, yet undoubtedly older than the overlying Kadapahs, may be mentioned granites, which are of medium grain when the intrusion assumes the shape of a compact boss, as in the case of the rock known as dome-gneiss in Hazáribágh, but which become extremely coarse-grained pegmatites when the shape of the intrusion becomes that of a comparatively narrow dyke. When the pegmatites traverse mica schists, they usually contain marketable mica, as in the pegmatite veins of Rajputana, Hazáribágh and Nellore.

Intrusive Granites and Pegmatites.

Another group of intrusions, probably of the same age, consists of some very interesting rocks containing minerals of the group of the felspathoids, such as the elæolite-syenites discovered by Mr. T. H. Holland at the Sivamalai hill in Coimbatore, and by Mr. Middlemiss in the Vizagapatam hill tracts, and the elæolite-sodalite-syenites discovered by Mr. Vredenburg in the Árávalli range. This is perhaps also the age of the "dunites" (rocks rich in chrome and magnesia) of the Salem district.

Elæolite-Syenites.

At a period that is not exactly known, numerous fissures were formed in these ancient rocks, which became subsequently filled by quartz impregnated with metallic minerals, producing mineral veins, the richest amongst which are those containing gold and copper.

Auriferous Veins.

THE KADAPAH SYSTEM.

THE orogenic effort that folded the Árávallis, Dhárwárs, and other ancient rocks, has powerfully affected the Indian Peninsula. Later efforts of the same kind have been comparatively feeble, the latest of these not being later than the Older Palæozoic era. Since Older Palæozoic times, the Indian Peninsula has no longer yielded to distinct corrugation, and has behaved as a rigid portion of the earth's crust. The main periods of orogenic effort have been practically synchronous all over the world, and are of great assistance in identifying rocks with one another in distant parts of the world, especially when the rocks are unfossiliferous or nearly so.

Two main periods of orogenic effort have affected many parts of the world during the Palæozoic, one in Silurian times, and the other in the Middle Carboniferous. The Peninsula has been affected by one or perhaps both of them, though in a much slighter degree than by the great post-Huronian upheaval. But the total absence of any fossils, so far as has been observed in beds older than Upper Carboniferous in the Peninsula, introduces an element of doubt in their correlation.

The bulk of the Kadapah System consists of shales and limestones. Slaty cleavage, varying in degree, is often observed in the shales, but the limestones never acquire the crystalline texture that is so common in

the Arávalli System. As might be expected, the Kadapahs are intermediate between the older Arávallis or Dhárwárs and the newer Vindhyans, not only in point of the degree of alteration, but also in the nature of the rocks constituting the two groups. The shales which are often calcareous, and the somewhat thin-bedded limestones are essentially similar to those of the Vindhyan formation, but the Kadapahs also contain some of the characteristic Huronian rocks, such as the manganese and iron ores, and the banded jaspers. It is only the latter, however, that are equally well represented in both formations. These bright-red jaspers have been extensively used in the inlaid decoration of the buildings of Delhi and Agra.

There are two main divisions of the Kadapah, each consisting of several series separated from one another by unconformities. The rocks resembling some of the Huronian beds, such as the banded jaspers, are especially abundant in the Lower Kadapahs, while the Upper Kadapahs are more like the Vindhyans. Amongst the Upper Kadapahs, one sometimes notices some remarkable conglomerates, or rather boulder-beds consisting of pebbles of various sizes, some of them very large, scattered through a fine-grained slaty or shaly matrix. These peculiar boulder-beds are regarded as glacial in origin.

Boulder-beds.

Of the two sub-divisions of the Lower Kadapah, the lowermost known as the Pápaghni Series has been observed only in the type area of the Kadapah System in Southern India. The upper member of the Lower Kadapah, known as the Bijáwar Series, is widely distributed throughout India, and is easily recognized on account of its association with a grand volcanic outburst, the products of which consist of basic lavas, sills and ash-beds intercalated amidst the Bijáwar sediments, and intrusive dykes and bosses of the same composition penetrating through rocks of greater age than the Bijáwars. These dykes are interesting as being probably the original home of the Indian diamonds, now found as derived pebbles in the later Vindhyan conglomerates.

Volcanic rocks of Bijáwar Series.

The Bijáwars were first described in the State of that name in Bundelkhand (Medlicott, 1860), and were subsequently identified south of the Son River in Rewa, and north of the Narbada River in the Dhár Forest. In the type-area of the Kadapahs, where their identity with the Bijáwar Series was not at first recognized, they were described under the name of Cheyair, and near Gwálior they were called the Gwálior Series. The Penganga beds of the Pránhitá Valley also appear to belong to this same horizon.

The Upper Kadapahs are represented in the type-area of the Kadapahs by the Nallamalai and Kistna Series, by the Kaladgi beds between Belgaum and Kaladgi, and by the Pakhals of the Lower Godávari. They are represented in Rewa State south of the Son River, and round the Chhatisgarh basin.

In the Himalayan region, the representatives of the Upper Kadapahs are the Baxa beds in the Eastern Himalaya, and the Blaini beds in the Simla region. The Haimantas of Spiti are very similar, lithologically, to the Upper Kadapahs. Their uppermost beds are of Upper Cambrian age.

Throughout the greater part of their outcrops, the Kadapahs dip at moderate or very low angles, and show very little sign of disturbance. Almost horizontal beds may be observed resting on the denuded edges of closely compressed synclines of Dhárwár strata, showing that a period of denudation intervened between the Huronian upheaval and the deposition of the Kadapahs. Nevertheless, along the Eastern Ghâts, along the eastern edge of the Chhatisgarh basin, and south of the Son River, the Kadapahs themselves are intensely compressed and folded in such a manner as to indicate that they have evidently formed part of mountain ranges, giving undoubted evidence that in addition to the older period of mountain formation, another set of orogenic phenomena has affected the peninsula after the Kadapah period.

THE VINDHYAN SYSTEM.

THE Vindhyan System named after the Central Indian highland that extends north of the Narbada, Son, and Damúda, and south of the Jumna and Ganges, is a vast formation presenting two principal facies, one mainly characterized by limestones and calcareous shales, the other by enormously massive sandstones. As a rule, the Vindhyan strata dip at low or very low angles, and are even less disturbed than the Kadapahs. Yet, along the south-eastern border of the Arávalli range, and in those places where the Kadapahs themselves have been conspicuously disturbed, the Vindhyans have also been affected by folding and overthrust, indicating that they too have shared in the mountain-forming disturbance. Even in such localities they are not affected to the same degree as the Kadapahs, and it is evident that the main phase in the disturbance of the Kadapah had been completed before the deposition of the Vindhyans, and that the Kadapahs had been greatly denuded in the interval.

In their type-area, which covers an immense territory from Dehri-on-Son to Hoshangabád and to Gwálior, and from there to Agra and to Neemuch, the Vindhyans consist of four main divisions: a lower division exhibiting the calcareous facies, which is known as the Lower Vindhyans; an overlying division consisting of two enormously massive sandstones known under the names of Kaimur and Rewa, separated by some subordinate shales; another division, mainly calcareous and similar to the Lower Vindhyans, which is known as the Lower Bhanders, and lastly, an uppermost division of massive sandstones, known as the Upper Bhander. The calcareous divisions average some 1,500 feet in thickness each, the sandstone ones about 500.

A remarkable group of highly silicious volcanic rocks, varying from rhyolites to quartz-andesites, occurs in the Lower Vindhyans. Amidst the pebbles of certain Vindhyan conglomerates in Bundelkhand and in Southern India, there occur diamonds (the Panna and the Golconda diamonds), probably derived from the denudation of the basic volcanic dykes of Bijáwar age.

There are several other outcrops besides that of the type-area of Central India, though none of them are so extensive. It is only in the type-area that the Bhanders are represented. The Lower Vindhyans together

with the Kaimur-Rewa sandstones are well represented in the Dhár forest, north of the Narbada, and in Western Rajputana, the latter exposure exhibiting a particularly fine development of the volcanic beds of the Lower Vindhyans, locally known as the Maláni beds, from the State of that name. All the other Vindhyan outcrops consist mostly or entirely of Lower Vindhyans. They occupy the greatest part of the Chhatisgarh basin, and constitute the Karnúl Series of the district of that name, and of the Bhíma Valley. The Sullavai sandstones of the Godávari Valley perhaps belong also to the same formation, unless they represent the sandstone and shale formation known collectively as the Red Shale Series in Rewa, where it underlies the Lower Vindhyans, and yet seems newer than any of the Kadapahs. It might be regarded as an oldest member of the Vindhyan system. Amongst the mountains of Northern India, the Vindhyans are represented by the Deoban Series near Chakráta, the Krol Series of the Simla area, and the Attock Series of the Punjab.

Building-materials.

The Vindhyan limestones constitute a valuable source of lime, while the sandstones have yielded the material for the masterpieces of Indian art from the time of Asoka to the present day. Amongst the buildings of Vindhyan sandstone may be mentioned the Buddhist stupas of Barhut, Sánchi, and Sarnáth, the exquisite temples of Kajráha, the palaces of Gwálior, Delhi, Agra, Fatehpur-Sikri, Amber, Díg, and the magnificent Jumma Masjids of Delhi, Agra, and Lahore. According to which beds are selected, it is possible to obtain monoliths of Egyptian magnitude, or flags of the thinness of slates. Such a variety of excellent material is obtainable that, in certain parts of India, public buildings and private dwellings, from the flooring to the walls and to the rafters and ceilings are built entirely of stone. Large quantities of railing posts are manufactured out of Vindhyan sandstone, and, until a few years ago, it was the usual material for telegraph posts.

FOSSILIFEROUS REPRESENTATIVES OF THE CAMBRIAN AND SILURIAN SYSTEMS.

THROUGHOUT the rock systems that remain to be mentioned, the presence of fossils removes the element of doubt that affects the attempts at correlating the rocks hitherto dealt with. The outcrops that can be unhesitatingly referred, in India, to the oldest fossiliferous formations of the globe, the Cambrian and Silurian, are relatively of small extent when compared with the vast areas occupied by the formations hitherto mentioned. The oldest of all, the Cambrian, has hitherto been met with only in two localities, the Salt Range of the Punjab and Spiti. The system is well developed in the eastern portion of the Salt Range, where its principal members are a purple sandstone, an arenaceous dolomite, and a group of bright-coloured shales with casts of salt crystals. The lower member, the purple sandstone, and the uppermost shales are quite unfossiliferous, but numerous fossils have been found in a band of shales intervening between the purple sandstone and the arenaceous dolomite. The fossils are of Middle Cambrian age, and include representatives of the most characteristic of the Palæozoic fossils, the curious crustacea known as trilobites. They were discovered by Dr. Warth in the year 1888. They belong to the genus *Redlichia* which characterizes the Lower and Middle Cambrian. The unfossiliferous purple sandstone is not unlike the Vindhyans. In the sections of the Eastern Salt Range it is seen resting on a great mass of unstratified clay, in the midst of which are situated the layers of salt from which the mountain range derives its name. But the structure of the range is one of extensive overthrust faulting, and it is probable that the salt marl is not in its normal situation with reference to the Cambrian strata, but is really much newer, and Tertiary in age.

Cambrian of the Salt Range.

Upper Cambrian fossils were discovered by Mr. Hayden in the upper portion of the Haimanta System of Spiti during the year 1898. These fossiliferous beds, whose aggregate thickness is about 1,000 feet, consist of slates with some quartzites and dolomites. They overlie with apparent conformity some 3,000 or 4,000 feet of unfossiliferous strata recalling the Upper Kadapah, and consisting of slates, some of which are ferruginous and carbonaceous, and of quartzites. These unfossiliferous beds may perhaps represent the Middle and Lower Cambrian. Amongst the fossils discovered by Mr. Hayden, there are trilobites belonging to the genera *Ptychoparia*, *Dikelocephalus* and *Olenus*.

Cambrian of Spiti.

The Silurian is not developed in the Salt Range, where the Cambrian is immediately succeeded by Upper Carboniferous beds. In Spiti, the Upper Cambrian is unconformably succeeded by an unfossiliferous quartzite, about 1,500 feet thick, succeeded by highly fossiliferous limestones and calcareous shales of a total thickness of some 500 or 600 feet. Amongst the leading fossils are a number of trilobites belonging to the genera *Cheirurus*, *Illœnus*, *Asaphus*, *Calymene*, and numerous corals, cystoids, brachiopods and gastropods. The fossiliferous beds include both Lower and Upper Silurian horizons (Caradoc to Wenlock).

Silurian of Spiti.

In the Northern Shan States of Burma the Lower Silurian is represented by shales of various colours with thick bands of limestones, containing numerous cystideans, bryozoa, brachiopods and trilobites belonging to the genera *Remnopleurides*, *Calymene*, *Pliomera*, *Sphærocoryphe*; and the Upper Silurian consists of strata exhibiting two different facies: an arenaceous facies (Namhsim Sandstone) containing numerous brachiopods, and some trilobites of the genera *Illœnus*, *Encrinurus*, *Calymene*, *Cheirurus*, *Phacops* (*Dalmanites*); and a calcareous facies (Zebingyi Beds), with graptolites, brachiopods, cephalopods, and trilobites of the genera *Phacops* and *Dalmanites*. The Namhsim Sandstones are principally of Wenlock age; the Zebingyi Beds, slightly newer.

Silurian of Burma.

Between the Lower Silurian and the Huronian or Archæan of the Shan States, there intervenes a thick series of quartzites and slaty shales that have been regarded as Cambrian, but containing no fossils.

DEVONIAN AND LOWER CARBONIFEROUS SYSTEMS.

THE strata intervening between the Silurian and the unconformity-conglomerate which, almost everywhere in India as also in many other parts of the world, indicates the commencement of the Upper Carboniferous, that is, therefore, the Devonian and Lower Carboniferous, are even more scantily represented in India than the Cambrian and Silurian. The scantiness of outcrops of those particular horizons is a characteristic feature of the region included within the limits of the Indian Empire. These horizons are entirely absent from the Peninsular region, unless it be shown eventually that the Vindhyans are partly of that age. Fossils of undoubted Devonian age have only been found in Chitrál and in the Northern Shan States, but in neither case has their stratigraphy been completely worked out. The presence of the trilobite *Phacops latifrons* and of the curious coral *Calceola sandalina* amongst the fossils of the Northern Shan States indicates that the Middle Devonian horizon is represented.

Devonian of Chitrál and of Burma.

In the Spiti region of the Himalaya, the Muth quartzite, an unfossiliferous band some 500 feet thick, and a group of limestones between 300 and 400 feet in thickness with poorly preserved fossils, overlying the Muth quartzite, may possibly represent the whole or a part of the Devonian. These beds are succeeded by the only undoubted Lower Carboniferous strata that have yet been observed in the Indian Empire.

Lower Carboniferous of Spiti.

In the region adjoining the lower part of the Spiti Valley, the aggregate thickness of the strata extending from the presumed Devonian to the Upper Carboniferous conglomerate amounts to over 4,000 feet. In this particular case, there seems to be a gradual passage upwards into the conglomerate, and it seems that the usual unconformity is locally bridged over, the whole of the Carboniferous System being present in this particular section. Where the maximum thickness is exhibited, the Carboniferous beds underlying the conglomerate have been divided into two sections, each of which is about 2,000 feet thick. The lower division named the Lipak Series is mainly calcareous and shaly, and contains numerous fossil brachiopods, amongst which may be mentioned several species of *Productus*, and the typically Lower Carboniferous *Syringothyris cuspidata*, numerous mollusca, and trilobites of the genus *Phillipsia*. The upper division known as the Po Series consists of quartzites and shales. It contains two sub-divisions, a lower one with a few fossil plants that seem identical with certain plants of the Culm of Europe and Australia (Lower Carboniferous), and an upper sub-division with marine fossils, amongst which one notices numerous Bryozoa. These beds have been named the "Fenestella shales" from the leading genus of Bryozoa. They are closely connected with the overlying conglomerate, and belong probably to the Upper Carboniferous.

GEOLOGICAL HISTORY OF INDIA DURING THE UPPER CARBONIFEROUS, PERMIAN, AND MESOZOIC PERIODS.

TOWARDS the end of the Middle Carboniferous, there occurred an extensive orogenic upheaval in many parts of the globe. Mountains, which denudation has now removed, were upheaved to an altitude comparable with that of the highest ranges of the present day, and there are even indications of the existence of glaciers. Except where sedimentation continued uninterrupted in places that remained unaffected by these movements of the earth's crust, we find, therefore, a well-marked stratigraphical break at the base of the Upper Carboniferous, which usually rests unconformably on the underlying rocks. The junction is usually indicated by an unconformity-conglomerate, which often exhibits peculiar characters that have been regarded as glacial. This break is particularly conspicuous in India where the Lower Carboniferous is unknown except in the very local Himalayan exposures just mentioned. With this exception the Carboniferous System, almost everywhere in India, commences with a peculiar boulder bed which cannot be older than Middle Carboniferous, and which supports a vast series of Upper Carboniferous and Permian strata.

Orogenic phenomena in Carboniferous times.

After the great upheaval of the Middle Carboniferous, the crust of the globe remained comparatively quiescent until the middle of the Tertiary era. Throughout the intervening periods we cannot, therefore, avail ourselves of any marked stratigraphical unconformities to establish divisions through that long series of ages. There are, however, indications of certain universal or widespread alterations in the relative level of the ocean that have left their mark in the stratified record, and that greatly assist in demarcating lines of division. Whenever the level of the ocean was comparatively high, its sediments invaded certain areas that had previously been continental. This was particularly the case at the time of the Upper Cretaceous (the period of the Chalk). Whenever the surface of the ocean subsided to an unusually low level, the previously formed sediments were left dry, and sedimentation was interrupted above them until the next return of the ocean. Owing to the wide areas over which they can be recognized, it is these interruptions which have principally been made use of as lines of demarcation between the various systems. Some of the most conspicuous of these interruptions, for instance, the one between the Permian and Trias that separates the Primary from the Secondary, or the one between the Cretaceous and Eocene that separates the Secondary from the Tertiary, are as distinct in India as in Europe. It must be noticed, however, that owing to the quiescence of the earth's crust during these periods, the breaks are unaccompanied by any stratigraphical unconformity. The occurrence of ferruginous beds representing a peculiar alteration product of rocks exposed to the air, known as "laterite," often assists in locating these stratigraphical breaks, in the absence of a stratigraphical unconformity. These ferruginous layers represent the altered surface of the sediment which was exposed to atmospheric agencies during the interval between two marine invasions.

Stratigraphical breaks indicated by lateritic bands.

The corrugation of the earth's crust that produced the great upheaval of mountain ridges in Middle Carboniferous times also accentuated a deep furrow almost encircling the world, and constituting an ocean, of which the present Mediterranean is the last remnant. This extinct ocean, known in geological nomenclature as the Tethys, completely separated the continents of the Northern and Southern hemispheres when it thus became deepened in Upper Carboniferous times. During the Lower and Middle Carboniferous, the separation was not so complete, and the lands of both hemispheres supported similar plants and animals. But during the Upper Carboniferous and Permian, all connection was severed, and the southern continent including the Indian Peninsula, parts of South America and South Africa, and Australia, joined together by lands that have now subsided beneath the Atlantic and Indian Oceans, was inhabited by a flora and fauna quite different from that of the northern lands. Something of the same sort is observed at the present day in Australia and New Zealand which, being separated from the rest of the world by a broad expanse of ocean, are tenanted by different plants and animals. Marine strata of Upper Carboniferous to Eocene age, largely consisting of shales and limestones are developed on an enormous scale in many parts of the extra-peninsular regions of the Indian Empire, and can readily be correlated with those of other parts of the world by means of their abundant fossils. The extra-peninsular regions were then submerged beneath the Tethys, while the peninsula remained as to-day a continental area. Consequently the marine beds of the extra-peninsular region are represented in the peninsula by great masses of fluviatile sandstones associated with coal-seams and containing no other fossils but fragmentary remains of plants and terrestrial animals. Owing to the differences between them and the corresponding flora and fauna of more northern lands, and owing to the scarcity of sections combining the marine and fluviatile facies, and in consequence also of the unfossiliferous nature of many of the fluviatile sandstones, it has not yet been possible to correlate exactly all the peninsular sandstones with the corresponding marine strata of the extra-peninsular regions. In the following pages it will be convenient, therefore, to mention separately the great sandstone formations of the peninsula and the calcareous and shaly marine beds of the extra-peninsular regions. The name of Gondwana series, originally applied to these fluviatile formations in India, has been extended to beds containing a similar fossil flora in South America, South Africa, and Australia: the southern continent, of which these lands are the remnants, is spoken of as Gondwana-Land. For the Palæozoic (Primary) formations that still remain to be noticed, and for the succeeding Mesozoic (Secondary) ones, it will, therefore, be necessary to examine separately two facies: the Gondwana facies with terrestrial fossils, and the marine facies.

Northern and Southern continents separated by the Tethys.

Gondwana-Land.

UPPER CARBONIFEROUS AND PERMIAN SYSTEMS.

(*a*) *Gondwana Facies.*

THE Gondwana Series consists principally of sandstones of fluviatile origin, with some subordinate shales and ironstones, the latter probably of lateritic nature. Certain horizons are rich in coal-seams. These strata occupy basins bounded by faults in the midst of the older rocks of the Indian Peninsula. These basins are arranged in linear series along the valleys of the Damúda and Barákar, the Mahánadi and the Godávari Rivers. The Damúda and Mahánadi series of exposures converge in a westerly direction and coalesce in southern Baghelkhand from where they continue westwards on the southern side of the Narbada Valley, concealed at times by the basaltic lavas of the Deccan trap until they culminate in the lofty peaks of the Sátpura Range. The Rajmahál hills of Bengal also include Gondwana rocks. In the Himalayan region, typical Gondwanas are found in the neighbourhood of Dárjíling and in Bhotán.

The Gondwana rocks are divided into two principal groups, the Lower Gondwanas of Palæozoic age, and the Upper Gondwanas of Mesozoic age. The Lower Gondwanas themselves have been divided into three principal series, known under the names of Tálchir, Damúda and Pánchet.

The base of the Tálchir, whenever it is not removed out of view by faulting, is characterized by a peculiar boulder-bed, regarded as glacial on account of its silt-like matrix and of the striations observed on some of the pebbles. It is known as the Tálchir conglomerate from the name of a coal-field in the Mahánadi region. The upper beds of the Tálchir constituting the Karharbári division contain some valuable coal-seams. The leading fossils of the Tálchirs are impressions of detached leaves known as *Gangamopteris*, which differ by the absence of a mid rib from the leaves of *Glossopteris* characterizing the overlying Damúda beds.

Tálchir boulder-beds.

The Damúda beds are the chief coal measures of India. The lower portion known as the Barákar division is the one most widely spread, and contains the most valuable coal-seams. The upper coal-bearing horizon is known in Bengal as the Rániganj division.

The uppermost division of the Lower Gondwanas, the Pánchet, is destitute of coal. It contains fossil remains of plants, some of which are identical with those of the underlying Damúdas, and remains of extinct reptiles and amphibians.

The geological horizon of the Tálchir conglomerate corresponds approximately with the base of the Upper Carboniferous (Uralian or Stephanian); at any rate, these beds are not older than Middle Carboniferous (Moscovian). The Karharbári coal-seams belong to the base of the Upper Carboniferous. The Barákar coals belong to a higher horizon of the Upper Carboniferous. The Ranigánj coals may be Lower Permian (Permo-Carboniferous or Artinskian). The Pánchet probably corresponds with the Upper or true Permian or Zechstein.

It will be seen, therefore, that the age of the coal measures of India differs considerably from that of the coal measures of Great Britain and the Franco-Belgian

basin, all of which are Lower or Middle Carboniferous in age. The Lower Gondwana coal corresponds with the Upper Productive coal measures of North America, and with the coal measures of central France, which recall the Damúdas on account of the enormous thickness of some of their seams.

The constitution of the Lower Gondwanas, where most typically developed in Bengal, may be tabulated as follows :—

		Approximate age.
PÁNCHET	.. ..	ZECHSTEIN.
DAMÚDA	RÁNIGANJ IRONSTONE SHALES BARÁKAR	ARTINSKIAN.
TÁLCHIR	KARHARBÁRI	URALIAN.
	BOULDER-BEDS	MOSCOVIAN.

In the coal-fields situated outside of Bengal, some of these divisions have received different names. Detailed monographs of all the coal-fields have been published in the Memoirs and Records of the Geological Survey of India.*

(*b*) *Marine Facies.*

THE marine representatives of the Ural and Artinsk stages are very widely developed throughout the extra-peninsular regions of the Indian Empire, where they are usually known as the Productus-beds, from the great abundance of fossil brachiopods belonging to that genus which they contain. It is in the Salt-Range that these beds have been most completely studied. In that range they are mostly calcareous and are collectively known as the Productus limestones. They have been classified as Lower, Middle and Upper Productus limestones, each of which is further sub-divided. The base of the Lower Productus limestones is a boulder-bed apparently glacial, identical with the Tálchir boulder-bed and of the same age. It contains a variety of fossils and most of the overlying beds are highly fossiliferous. The successive faunas have been studied in great detail by Waagen, whose descriptions have been published in the Palæontologica Indica. The fauna of the Lower Productus limestones and that of the lower divisions of the Middle Productus limestones indicates that these beds belong to the Upper Carboniferous Period. The remainder of the Productus limestones, owing to the presence of fossil ammonites with complex sutures, such as the genera *Cyclolobus* and *Medlicottia*, is correlated with the Lower Permian (Permo-Carboniferous or Artinskian). The uppermost beds of the Upper Productus limestones are immediately succeeded by a conglomerate of Triassic age, the representatives of the Zechstein or Upper Permian being absent from that region, as from all the exposures of marine Permian in India.

Productus-beds.

Boulder-bed of the Salt-Range.

The same rocks, either calcareous or shaly, are extensively developed all along the central ranges of the Himalaya. (The outer ranges are largely occupied by rocks corresponding with the ancient unfossiliferous series of the peninsula). The most constant member of the group is the one known as the Productus shales which corresponds with the Upper Productus limestones of the Salt-Range, and is of Lower Permian age.

In Garhwál, the Productus shales overlie unconformably beds of Lower Palæozoic age. In Spiti, they pass inferiorly into a calcareous sandstone of Upper Carboniferous age, the base of which is conglomeratic. This conglomerate usually rests unconformably on various horizons ranging from Silurian to Lower Carboniferous, except where the Po Series, mentioned in a previous paragraph, attains its maximum development: there the conglomerate passes conformably downwards into the uppermost member of the Po Series, the Fenestella shales, themselves of Upper Carboniferous age.

Permian and Upper Carboniferous of Spiti.

It is important to notice, therefore, that the Spiti conglomerate is not the equivalent of the Talchir conglomerate or the boulder-bed of the Salt-Range, but belongs to a higher horizon corresponding probably with some zone of the Barákar.

The Fenestella shales themselves appear to correspond with some of the Barákar and Karharbári horizons, and are represented in Kashmir by the Zewan beds which underlie the Productus shales (Lower Permian), and overlie shales and sandstones containing fossil fishes and impressions of *Gangamopteris*, which belong to one of the zones of the Tálchir and rest on volcanic rocks, probably of Lower Carboniferous age.

Zewan beds of Kashmir.

Beds corresponding with the Productus limestones of the Salt-Range are known in the Eastern Himalaya. In Burma and in Tenasserim, they are largely represented by limestones crowded with foraminifera of the genera *Fusulina* and *Schwagerina*. The Fusulina limestones have also been observed in Balúchistán in the Pishín and Zhob districts. The respective limits of Upper Carboniferous and Lower Permian in all these exposures has not yet been ascertained. One of the curious "exotic blocks" of Johar on the Tibetan frontier, scattered through a gigantic volcanic breccia of Cretaceous age, that forming the peak known as Chitichun I, is a huge mass of limestone containing fossils of the same age as the Kálabágh zone of the Salt-Range at the base of the Lower Permian.

Fusulina and Schwagerina limestones.

Chitichun I.

The uppermost beds of the Lower Permian of Garhwál contain the remarkable genus of ammonites discovered in 1879 by Mr. Griesbach, and described by him as *Otoceras*. The layer containing this fossil is immediately succeeded by Lower Triassic beds without any indication of unconformity, and was, therefore, taken to represent a passage zone between the Permian and Trias. But there is a complete change of fauna between this layer and the succeeding beds, indicating a break quite as pronounced as in the Salt-Range. The Otoceras layer is ferruginous which indicates that it probably remained exposed to the atmosphere, and that there was an interruption of sedimentation after the period during which it was formed. The newest age that can be assigned to it is the top of the Lower Permian.

Otoceras beds.

* Most of these monographs are out of print. They can be consulted, however, in most public libraries.

TRIASSIC, JURASSIC, AND LOWER CRETACEOUS SYSTEMS.

(*a*) *Gondwana Facies.*

THE Upper Gondwanas are for the greatest part barren of useful minerals and have, therefore, received very little attention from the Geological Survey of India. Their age is often doubtful and their nomenclature confused.

The unfossiliferous red sandstones of the Mahádeva group, which attain a thickness of some 8,000 feet in the Mahádeva hills of the Sátpura Range, are perhaps of Triassic age. Similar beds, perhaps of the same age, overlie the coal measures in South Rewa and in some of the Damúda and Mahánadi valleys series of coalfields.

The remaining divisions of the Upper Gondwana are usually of small thickness and are closely related to one another. Their age, ranging from Upper Jurassic to Lower Cretaceous, is sometimes approximately and sometimes accurately defined by means of their fossil contents. In ascending order, there are four divisions: firstly, the Rajmahál; secondly, an intermediate group for which no general name has yet been selected; thirdly, the Jabalpur; and fourthly, the Umia. The three first, and sometimes the last, are represented all along the East coast of the peninsula from the neighbourhood of Vizagapatam to that of Tanjore.

The type of the Rajmahál division is observed in the hills of that name in Bengal, where the fossil plant-bearing beds are associated with basaltic rocks. Basic dykes connected with this volcanic outburst are common in some of the coal-fields of Bengal, and include some interesting petrological types, such as the mica-peridotites discovered in 1894 by Mr. T. H. Holland.

Mica-peridotites.

The type of the Jabalpur beds is near the town of that name. Instead of consisting chiefly of sandstones, like the groups hitherto mentioned, they are largely made up of clays and contain beds of lignite.

In Kachh the Umia beds, chiefly sandstones and shales, attain a vast thickness (3,000 feet), and contain strata with fossil plants closely related to the Jabalpur flora, intercalated between beds with marine fossils respectively of Wealden and Lower Greensand age. This fixes the age of the newest Gondwanas as Lower Cretaceous. Beds apparently of the same age in Káthiáwár and Gujrát contain seams of lignite.

(*b*) *Marine Facies.*

THE marine representatives of the Trias and Jura are enormously developed in the extra-peninsular regions of the Indian Empire, the Upper Jurassic being also well developed along the borders of the peninsular area in Kachh and Rajputana. The different beds of the marine Mesozoic formations in India can be readily correlated with their equivalents in other parts of the world by means of the numerous fossil ammonites which they contain. Each horizon of the Mesozoic is characterized by a particular species of ammonite, and the zones thus defined can be recognized in all parts of the world. It is in the Mesozoic zones of the Central Himalaya and the North-Western Frontier, that a number of able scientists, amongst whom special mention should be made of Stoliczka, Griesbach, Middlemiss, Diener, von Krafft, and Hayden, have accomplished the most brilliant geological work as yet achieved in India.

The Trias, consisting principally of limestones, calcareous shales and massive dolomites, is characterized in the Salt-Range and the Central Himalaya by a richness in fossils unequalled in any other part of the world.

It is especially in the Central Himalaya that the system is most complete, the Upper Trias, in particular, being developed on a truly gigantic scale. In Spiti, for instance, the respective thicknesses of the three divisions are roughly 50, 500 and 3,000 feet. The lower division corresponds with the "ceratite-beds" of the Salt-Range.

Trias of the Himalaya.

Amongst the fossils characterizing various horizons of the Lower Trias, may be mentioned, *Ceratites normalis*, the genera *Danubites*, *Tirolites*, and *Meekoceras*, and, in the upper zones, *Rhynchonella Griesbachi*.

The Middle Trias is characterized by the great abundance of species belonging to the genera *Ceratites* and *Ptychites*, by *Spiriferina Stracheyi* in the lower beds, and, in the upper beds, by *Daonella Lommeli*.

Amongst the enormous succession of strata constituting the Upper Trias may be noticed, towards the base, the beds with *Halobia;* higher up those known as Tropites beds from the abundance of ammonites belonging to that genus; still higher the Juvavites beds of Spiti and Halorites beds of Kumaon, containing innumerable ammonites, amongst which the remarkable genus *Pinacoceras;* lastly, the *Monotis salinaria* shales, and strata with *Spiriferina Griesbachi* and *Megalodon*. The Monotis shales are also largely developed in the Pishín and Zhob districts of Balúchistán, while shales and limestones with *Halobia* constitute a considerable proportion of the Arakan Yoma.

The great thickness of Jurassic limestones, which overlies the Trias in the Central Himalaya, has yielded very few fossils, and therefore cannot be readily subdivided into zones. These limestones are overlaid by the "Spiti shales" of uppermost Jurassic age, whose well-known ammonites are current as an article of trade, being used all over India for certain religious rites.

In Balúchistán, the Lias (Lower Jurassic) consists of 3,000 or 4,000 feet of black limestones, some of them oolitic, and calcareous shales, with some highly fossiliferous bands, in which the principal sub-divisions of the European series have been identified. They are succeeded by an equal thickness of massive limestones of Middle Jurassic age, which constitute the lofty peaks that surround Quetta. This massive limestone is unconformably overlaid by the Lower Cretaceous, the Supra-Jurassic series being absent from Balúchistán.

Jurassic of Balúchistán.

The Upper Jurassic zones, missing in Balúchistán, are represented in Kachh by a thickness of about 3,000 feet of oolitic limestones and shales, passing upwards into sandstones; all the principal ammonite-zones of the Upper Jurassic of Europe have been identified in this sequence. The same horizons are represented in the Salt-Range and in Western Rajputana. The Jurassic is largely represented in Burma, where, however, it has not been studied in detail.

Jurassic of Kachh.

The Upper Jurassic of Kachh is succeeded by an equal thickness of Lower Cretaceous sandstones, often glauconitic, extending up to the horizon of the Lower Greensand, and constituting the Umia beds, already mentioned with reference to the Gondwana facies.

Lower Cretaceous.

In Balúchistán, the Lower Cretaceous is represented by the black "belemnite shales," containing belemnites of the genus *Duvalia*, and by the overlying brilliantly striped white and red limestones known as the "Parh limestones." The Himalayan equivalent of these rocks is the Giumal sandstones. The equivalents of the Parh limestones have been observed in the Arakan Yoma and the Andaman Islands.

THE UPPER CRETACEOUS SYSTEM.

THE middle stages of the Cretaceous, especially those just preceding the Gault, are not known in India, this horizon coinciding with one of the most pronounced breaks in the Indian Geological sequence.

Absence of Middle Cretaceous.

It is near the East Coast of Southern India, from Pondicherri to Trichinopoli, that the most complete sequence of Upper Cretaceous beds is observed. The beds are principally shales and sandstones with some calcareous bands full of well preserved fossils that have been described in great detail by Forbes, Stoliczka and Kossmat. There are three principal divisions, the Utatúr, Trichinopoli and Ariyalúr. The Utatúr, mostly shales with some coral limestones, contains over 100 species of ammonites distributed in three zones: the Schloenbachia beds with *Schloenbachia inflata, Turrilites Bergeri, Hamites armatus;* the Acanthoceras beds with numerous species of *Acanthoceras*, and with *Turrilites costatus;* and an upper zone with *Acanthoceras conciliatum*, and *Nautilus Huxleyanus*. These three divisions correspond respectively with the Gault, Cenomanian, and Turonian.

Upper Cretaceous of Southern India.

The Trichinopoli beds of Lower Senonian age (with 27 species of ammonites), consisting of sands, clays and shingle beds intercalated with shell-limestones, largely used for ornamental purposes, include a lower division characterized by *Pachydiscus peramplus, Protocardium Hillanum*, etc., and an upper division with *Placenticeras Tamulicum, Heteroceras indicum*, etc.

The Ariyalúr, mostly Upper Senonian, is chiefly arenaceous, and contains at its base a highly fossiliferous band with more than 50 species of ammonites belonging to the genera *Pachydiscus, Baculites, Sphenodiscus, Desmoceras*, etc., and numerous lamellibranchiata and gastropods amongst which the Cypreidæ and Volutidæ are particularly well represented. The uppermost strata of the Ariyalúr are known as the Niniyur beds, and contain the characteristic Danian species *Nautilus Danicus*.

Upper Cretaceous of Balúchistán.

Cenomanian beds containing *Acanthoceras* are known in Hazara and in the Samana range. The Upper Cretaceous is largely developed in Balúchistán and in the Laki range of Sind. Its lower members are limestones constituting the Hemipneustes beds, of Campanian or Lower Maestrichtian age. They are followed by a great thickness of sandstones often interbedded with volcanic material, known as the Pab sandstones. Highly fossiliferous bands are sometimes associated with the Pab sandstones, especially in their upper zones, the commonest fossil being *Cardita Beaumonti*. It is possible that some of the uppermost *Cardita Beaumonti* beds are of Danian age.

The great volcanic group of the Deccan trap in the peninsula is underlaid by a formation of slight thickness, but of considerable horizontal extent, constituting the Lameta series where it exhibits the fluviatile facies, and the Bágh beds, where it is marine. The Bágh and Lameta correspond with the Utatúr of Southern India.

Bágh and Lameta beds.

The eruptions of the Deccan trap continued up to the end of the Cretaceous, the uppermost layer of the *Cardita Beaumonti* beds in Sind being still overlaid by a basalt flow. These eruptions have covered an enormous portion of the peninsula with basaltic flows, the western portion in particular, north of latitude 16°, being entirely occupied by this formation. In the Zhob Valley of Balúchistán, the series is represented by huge intrusions of gabbro associated with serpentines locally rich in chrome. Similar rock are extensively developed in the Arakan Yoma and the Andaman Islands.

Deccan Trap.

Chrome-bearing serpentines.

The Deccan trap eruptions appear to have coincided with the final breaking up of Gondwana-Land.

THE EOCENE SYSTEM.

With the end of the Cretaceous, the Mesozoic or secondary era came to a close.

The Eocene in India, as in other countries, includes the bulk of the nummulitic limestones. It includes three principal divisions: the Ranikot, the Laki, and the Khirthar. The uppermost beds of the Upper Ranikot contain the earliest abundant nummulites belonging principally to the species *N. planulatus*.

The Laki division exhibits either a shaly arenaceous or a calcareous facies according to various localities. Its characteristic nummulites are *N. atacicus*, and *N. (Assilina) granulosa*. The Laki limestones abound also in foraminifera of the genus *Alveolina*. The Laki division is economically of great importance containing as it does an important coal-bearing horizon in Balúchistán and the Punjab.

Laki series with coal-seams.

The Khirthar consists largely of limestones which, in the range of that name along the Sind-Balúchistán frontier, are as much as 3,000 feet thick. It contains the zones richest in nummulites, amongst which may be mentioned *N. lævigatus, N. perforatus, N. gizehensis, Assilina spira*.

Khirthar series.

Both the Laki and Khirthar are well developed in Kachh, and in the Salt-Range in the Arakan Yoma and in the Andaman Islands. The Laki is largely developed in Western Rajputana. The nummulitics of Surat and of Assam and the Subáthu group of the Simla region correspond with the Khirthar.

THE PEGU OR MEKRAN (FLYSCH) SYSTEM.

(Oligocene and Lower Miocene).

THE end of the Eocene coincides with the opening of the last and most important chapter of the geological history of India. The quiescent conditions that had lasted ever since the Upper Carboniferous now came to an end, and the earth's crust entered into a renewed phase of disturbance. The enormous mass of sediments that had so quietly accumulated upon the gradually sinking floor of the Tethys was now powerfully compressed in a horizontal (tangential) direction, and was thrown into a succession of ridges, which became the great mountain ranges of the present day: the Alps, the Pyrenees, the Himalaya.

Upheaval of the Himalaya.

Three phases can be distinguished in this grand upheaval, one at the end of the Eocene, one in the Middle Miocene, and the last in the Middle or Upper Pliocene. The first upheaval, although it extensively folded the Eocene and underlying older strata, uplifting them in many regions into ranges of considerable altitude, was not nevertheless sufficient to obliterate the Tethys. This ocean still preserved its continuity; the gradual subsidence of its floor, of which we have evidence from Upper Carboniferous to Eocene, still continued, or even became accentuated, judging by the enormous thickness of sandstones and gritty shales all bearing evidence of deposition in rather shallow water that accumulated throughout the Oligocene. These dark grey or greenish shales and often calcareous sandstones are singularly uniform and monotonous in appearance, constituting the bulk of the great formation known as the "flysch." Beds of similar appearance had already been deposited in the same area during Eocene and even Cretaceous times, but it is during the Oligocene that most of the flysch was deposited.

The flysch.

Towards the end of the Middle Miocene, a second orogenic phase still more powerful than the Upper Eocene one upheaved the flysch strata, folding them into innumerable corrugations, and the Tethys was cut up into a series of disconnected lagoons or inland seas which finally disappeared in the last great upheaval of Pliocene times.

A homogeneous series of strata was thus formed, resting unconformably upon the Eocene, and unconformably overlaid by the Upper Miocene and Pliocene. It constitutes the Pegu system of Burma, and the Mekran system of Balúchistán.

Kojak shales.

The flysch facies of this system in Balúchistán is known as the Kojak shales, an almost unfossiliferous formation, occasionally containing, however, fossiliferous bands with *Nummulites intermedius*, *N. vascus*, and other fossils of Oligocene age.

Calcareous zones of Sind and Balúchistán.

In the neighbourhood of what was once the shore of the ocean in which the flysch was deposited, the sediments acquire a calcareous facies and become highly fossiliferous. In Sind and in Balúchistán the fossiliferous facies is divided into three principal divisions, the Nari, Gáj, and Hingláj. The Nari includes the Middle and part of the Upper Oligocene. Its lower division frequently consists of massive nummulitic limestones resting with varying amounts of unconformity on the nummulitic limestones of Eocene age. It is the last horizon rich in large nummulites, principally *N. intermedius* and *N. vascus*, accompanied by lepidocyclines of the group of *L. dilatata*. The Gáj, consisting of shales and coral limestones, is of uppermost Oligocene age.

Nari series.

Gáj series.

The Hingláj Series, well developed along the Mekran Coast, in the Persian Gulf Islands, in the Irawaddi Valley and Andaman Islands, consists principally of clays and sandstones, and conglomerates with a few calcareous bands. The Hingláj Series is mainly of Burdigalian age (Lower Miocene), the uppermost beds being perhaps Helvetian (Middle Miocene).

Hingláj series.

Corresponding in age with a portion of the Pegu System are the great intrusions of granite, of diorite, of augite-syenite, and of porphyries, that cut through the Eocene rocks of Balúchistán forming some of the highest hill ranges, such as the Ras Koh, the Khwaja Amran. Of the same age are the Tertiary granites of the Himalaya.

Granitic intrusions.

Other products of this igneous activity are the petroleum of Burma, Assam and the Punjab, and in all probability the salt-marl and salt deposits of the Salt-Range, as well as many deposits of sulphur. The petroleum, owing to its inferior density as compared with water, has collected along the axes of anticlines in the Pegu System, wherever a layer of argillaceous rock has provided an impermeable roof. Gases have also collected along these anticlinal crests, and are apt to find their way to the surface through fissures, producing the mud-volcanoes that often rise along the outcrops of these anticlinal arches. There are four principal groups of mud-volcanoes, situated respectively along the Eastern and Western borders of the Arakan Yoma, in the Gomal Valley along the Afghán-Balúch Frontier, and along the Mekran Coast.

Petroleum, salt, and sulphur.

Mud-volcanoes.

In the Punjab, the equivalents of the Pegu System are known as the Murree beds; in the Himalaya as the Kasauli and Dagshai beds.

The coal-seams of Assam and Burma occur in the Pegu System and are of Oligocene age.

In the Mari hills of Balúchistán, some beds, containing *Mastodon angustidens* and other Middle Miocene fossils, probably belong to the upper part of this system.

THE SIWALIK SYSTEM.

THERE are no typical marine deposits in India newer than the uppermost beds of the Pegu System. The main upheaval of the Himalaya and of the mountains of Balúchistán and Burma took place during the Middle Miocene, after which nothing remained of the ocean that formerly occupied their site but a number of basins isolated from one another in which the strata known as Siwaliks, principally clays, sandstones and conglomerate were deposited. Like all inland seas, these basins were subjected to variations in their degree of saltness that were prejudicial to the development of aquatic organisms. Hence the remains of animals of this class are scanty. Some of the conglomerate beds, especially in the Upper Siwaliks, are of fluviatile origin, and may be regarded as alluvial fans.

In Pliocene times, these beds were upheaved during the final phase of mountain-growth of the Himalaya, after which the only earth-movement that has taken place is a comparatively gentle warping that has affected certain regions of Peninsular and extra-Peninsular India and of the Indo-Gangetic plain in Post-Pliocene times.

The chief interest of the Siwalik formation resides in the remains of extinct animals that have been made known to the scientific world through the researches of Cautley, Falconer, and Lydekker. The bones and teeth of these animals are found principally in the conglomeratic layers at the base and at the top of the series. Those found at the base are of Upper Miocene (Pontian) age, and contain a fauna contemporaneous with that of Pikermi in Greece. Amongst the numerous extinct genera of this fauna may be mentioned *Dinotherium, Mastodon, Hipparion, Helladotherium, Hyænarctos*. The upper conglomerates are of Pliocene age and contain the living genera *Elephas, Equus, Ursus* and many others, all of them represented, however, by extinct species.

Siwalik fauna.

THE QUATERNARY ERA.

It is not certain whether at the end of the Pliocene upheaval an arm of the sea still separated the Himalaya from the Indian Peninsula, but if this were so, it soon became filled by the products of the disintegration of the Himalaya, and in this manner originated the great alluvial plain of the Ganges, which now links the Peninsula together with the Asiatic continent. The great depth of the Ganges alluvium, as revealed by borings, indicates that in its case also subsidence must have proceeded simultaneously with deposition.

Formation of the Ganges alluvium.

Except in the neighbourhood of the delta, the greater portion of the alluvial plain is above the level of the highest floods of the Ganges and its tributaries, indicating that this area has been upheaved, or that the delta region has been depressed within relatively recent times. The presence of a mass of ancient alluvium, known as the Madhupur jungle north of Dacca in the midst of the delta region, further indicates that a certain amount of disturbance must have occurred. The existence of ancient alluvial areas enclosed within rock basins along the course of some of the Peninsular rivers, such as the Narbada, Tápti and Godávári, points to the same conclusion, and it is evident that a certain amount of irregular warping has affected India in Pleistocene times. In consequence of these physical changes, the ancient alluvium and the one still in process of formation can be readily distinguished from one another. They are known in the vernacular as "bhángar" and "khádar." In geological age, they correspond with the two main divisions of the Quaternary era, the Pleistocene and Recent. The Pleistocene age of the bhángar or older alluvium is clearly shown by the remains of numerous extinct animals amongst which may be mentioned *Elephas antiquus*, a characteristic species of the Pleistocene of Europe, and various extinct species of horse, ox, rhinoceros, hippopotamus. Contemporaneous with these are the earliest remains of prehistoric man in the shape of stone implements belonging to the "Chellean" or amygdaloid type, the earliest type of the earlier stone age.

Older and Newer alluvium.

Prehistoric man.

Implements of the amygdaloid type have been found embedded in "laterite," a ferruginous material, which is formed as a superficial alteration of rocks in warm regions subjected to "monsoon" conditions, that is, to alternately wet and dry seasons. The effect of lateritic weathering is to remove the silica of rocks, leaving a concretionary mass consisting of hydrates of iron, aluminium or manganese.

Laterite.

When the laterite is very free from silica and contains locally a large excess of the hydrates either of iron, aluminium or manganese, it constitutes valuable ores of these metals.

The laterite is largely of Pleistocene age, but some of it may still be forming at the present day, while there are important masses of the same material that were formed in Eocene or even earlier times.

Some of the "raised beaches" observed all round the coasts of India at altitudes of as much as 100 feet are probably Pleistocene. The consolidated wind-blown calcareous sand largely made up of foraminiferal tests, which occurs along the coasts of the Arabian sea and is largely used as a building material under the name of Porbandar stone, is also probably Pleistocene.

Raised beaches.

Porbandar stone.

There are two regions of Pleistocene and Recent volcanic activity situated along lines of dislocation in the curved systems of ranges on either side of the great Himalayan "arc." The eastern one situated in the "Malay arc" follows the inner or eastern side of the Arakan Yoma, and its continuation the Andaman Islands, the best known volcanoes being Pupa, Narcondam Island, and Barren Island.

Recent volcanoes.

Along the western or "Iranian arc," the largest volcano within the Indian Empire is the extinct Koh-i-Sultán in the Nushki Desert.

Oscillations of the relative sea level during the Recent Period are indicated by such features as low-level raised beaches, the oyster-bed lately discovered in Calcutta, the submerged forests of Bombay and the East Coast.

THE GEOLOGICAL SURVEY OF INDIA.

The Geological Survey of India was organized along its presents lines in 1850, under the superintendence of the late Dr. Thomas Oldham, LL.D., F.R.S., and was designed in the first instance for a survey of the coalfields of the country. The work has, however, been extended over other areas, with a view to the preparation of a geological map, and the investigation of other minerals of economic value.

Coincident with the issue of the geological maps descriptive *Memoirs* and shorter papers in the *Records* have been published, dealing with the scientific and economic aspects of the work of the Department. The published memoirs now exceed 90 volumes, and the main results have been summarized in Manuals, separately treating the scientific and the economic results of the survey.

Since the retirement of the late Dr. T. Oldham, the Department has been under the direction successively of—

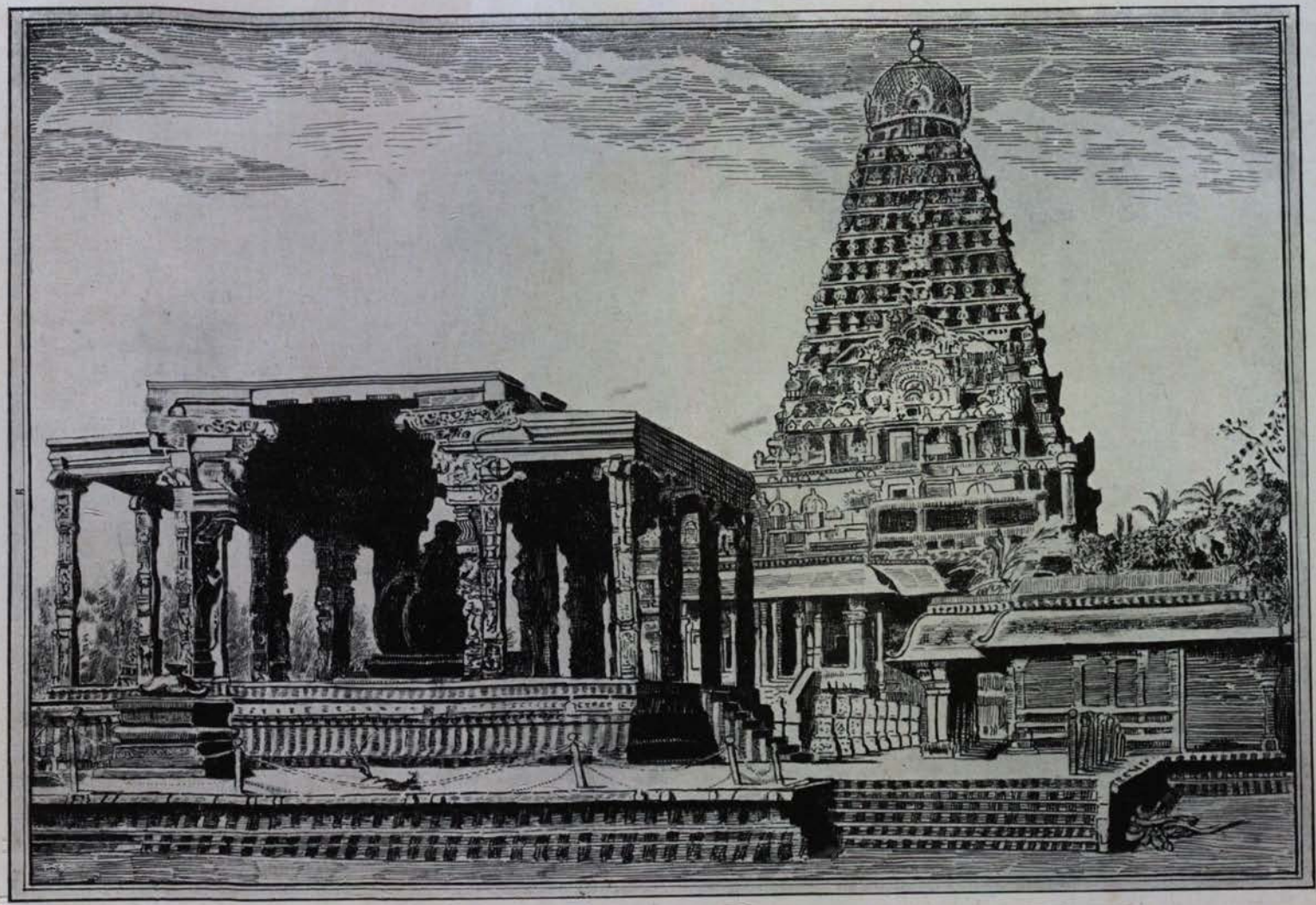
H. B. Medlicott, M.A., F.R.S.; W. King, B.A., D.SC.; C. L. Griesbach, C.I.E.; and T. H. Holland, A.R.C.S., F.R.S.

Table of Geological Formations in the Indian Empire.

Peninsular Area.	Kachh.	Salt-Range.	Himalayan Region and N.-W. Frontier.	Baluchistan and Sind.	Burma and Malay Region.	Geological age.
					Volcanoes of Burma, the Bay of Bengal, Baluchistán.	
Newer alluvium (khádar), delta formations, etc.						RECENT.
Karnúl caves.						
Older alluvium (bhángar) of Ganges, Narbada, Godávari, etc., with *Elephas antiquus*, *Hippopotamus*, etc., and Chellean implements; "karewa" deposits; older raised beaches, Porbander stone, etc., etc.						PLEISTOCENE.
FINAL PHASE OF HIMALAYAN UPHEAVAL.						
(Cuddalore sandstone).						PLIOCENE.
SIWALIK. Upper beds with *Equus*, *Elephas*, *Ursus*, *Sivatherium*, etc.						
SIWALIK. Middle series.						
SIWALIK. Lower beds with *Hipparion*, *Mastodon*, *Dinotherium*, *Helladotherium*, etc.						PONTIAN.
SECOND PHASE OF HIMALAYAN UPHEAVAL.						
PEGU or MEKRAN SYSTEM. Gáj beds of Kathiawar.	PEGU or MEKRAN SYSTEM. Hingláj or Dwárka series. Gáj series.	Murree beds, intrusive salt and petroleum.	Kasauli, Dagshai, and Murree beds. Intrusive granites.	Intrusive Granites Syenites, etc. Flysch System. Beds with *Mastodon angustidens*. Hingláj series. Gáj series. NARI Upper. Lower.	PEGU SYSTEM. Intrusive petroleum.	HELVETIAN.
						BURDIGALIAN.
						AQUITANIAN.
						STAMPIAN.
						SANNOISIAN.
FIRST PHASE OF HIMALAYAN UPHEAVAL.						BARTONIAN.
KHIRTHAR. Nummulitics of Broach, Surat, etc.	Khirthar series.	Khirthar series.	Nummulitics of Subáthu.	Khirthar series.	Khirthar series.	
LAKI. Nummulitics of Western Rajputana.	Laki series.	Laki series.	Laki series.	Laki series.	Laki series.	LUTETIAN.
				Zone of *N. Planulatus*. RANIKOT (Sind only).		CUISIAN.
				Lower marine beds. RANIKOT (Sind only).		LONDON CLAY.
				Fluviatile beds. RANIKOT (Sind only).		WOOLWICH AND READING.

PENINSULAR AREA.	KACHH.	SALT-RANGE.	HIMALAYAN REGION.	BALUCHISTAN AND SIND.	BURMA.	
DECCAN TRAP.	DECCAN TRAP.			Deccan Trap, intrusive gabbros and serpentines.	Intrusive serpentines.	DANIAN.
NINIYUR. Rájámahendri beds.			Breccia of Johar, volcanics of Upper Indus.	Pab sandstones. *Indoceras* beds.		MAESTRICHTIAN.
ARIYALUR.				*Hemipneustes* beds.		
TRICHINOPOLI. Upper.						CAMPANIAN.
TRICHINOPOLI. Lower.						LOWER SENONIAN.
UTATUR. Upper Utatúr.						TURONIAN.
UTATUR. *Acanthoceras* beds of Southern India, Tharia beds of Assam, Bágh and Lameta beds.			Chikkim series of Central Himalaya, *Acanthoceras* beds of Hazara and Samana.			CENOMANIAN.
UTATUR. *Schloenbachia* beds of Southern India.						GAULT.
STRATIGRAPHICAL BREAK.						
Gondwana facies. JABALPUR, RAGAVAPURAM, RAJMAHAL. Fossiliferous beds of Western Rajputana.	UMIA beds.	Fossiliferous limestones.	Giumal sandstone.	Parh limestone.	CORRESPONDING BEDS NOT CLASSIFIED.	LOWER GREENSAND.
			Spiti shales.	Belemnite shales.		WEALD.
	KATROL					UPPER JURASSIC.
	CHARI			Massive limestone.		BATHONIAN.
						BAJOCIAN.
	PATCHAM.			Black limestones.		LIAS.
MAHADEVA (Pachmari).		Limestones with bivalves.	Monotis shales.	Monotis shales.		NORIAN.
			Juvavites and Halorites beds.			
			Tropites beds.			CARNIAN.
			Halobia beds.			
			Daonella beds.			
			Muschelkalk.			MUSCHELKALK.
		Ceratite beds.	Hedenstræmia, Meekoceras, Ophiceras beds.			BUNTER.

Peninsular Area.	Kachh.	Salt-Range.	Himalayan Region and N.-W. Frontier.	Baluchistan and Sind.	Burma and Malay Region.	
PANCHET.						**ZECHSTEIN.**
DAMUDA. Rániganj.		Upper Productus beds.	Productus shales.			**ARTINSKIAN.**
DAMUDA. Ironstone shales.		Kálabágh beds.		Fusulina limestones.	Fusulina and Schwagerina limestones.	
		Virgal and Katta beds.	Fenestella shales, Zewan beds.			
DAMUDA. Barákar.		Lower Productus beds.				**URALIAN.**
TALCHIR. Karharbári.		Speckled sandstone.				
TALCHIR. Boulder bed.		Boulder bed.				**MOSCOVIAN.**
			Culm beds.			**LOWER CARBONIFEROUS.**
			Lipak series. Fossiliferous beds of Chitrál. Muth quartzite.		Middle Devonian beds.	**DEVONIAN.**
			Upper and Lower Silurian fossiliferous beds.		Zebingyi beds, Namhsin sandstones.	**UPPER SILURIAN.**
					Fossiliferous beds.	**LOWER SILURIAN.**
		Magnesian sandstone.	Upper Haimanta.			**UPPER CAMBRIAN.**
		Neobolus beds. Purple sandstone.	Lower Haimanta.			**MIDDLE CAMBRIAN.**
VINDHYAN. LOWER & UPPER BHANDER.					Pre-Silurian Sandstones, etc.	
VINDHYAN. KAIMUR & REWÁ.						
VINDHYAN. LOWER VINDHYANS including Karnúl and Málani beds.			Deoban, Krol, and Attock series.			**? SILURIAN or ? CAMBRIAN.**
KADAPAH. **UPPER**, including Nállamalai, Kistna, Kaládgi series.			Baxa and Blaini series.			**? CAMBRIAN.**
KADAPAH. **LOWER.** **BIJAWAR**, with Cheyair and Gwálior series, and basic volcanic rocks.						**PRE-CAMBRIAN.**
KADAPAH. **PAPAGHNI.**						
ARAVALLI, Champáner, Chilpi, Dhárwár, Karakpur series, etc. Dome-gneiss, mica-pegmatites, etc.			Daling, Jaunsar, Vaikrita series, etc.		Crystalline limestones, etc.	**HURONIAN.**
NILGIRI OR MOUNTAIN GNEISS, granitic or granulitic in structure and rich in enstatite, also Anorthosites.						**ARCHÆAN.**
BUNDELKHAND GNEISS, including granitoid gneisses such as the Bala Ghat or Hosur Gneiss.			Central Gneiss.		Fundamental Gneiss.	
BENGAL GNEISS, including the schistose and banded gneisses.						



THE VIMANA OF THE TEMPLE AT TANJORE.

Indian Art and Architecture.

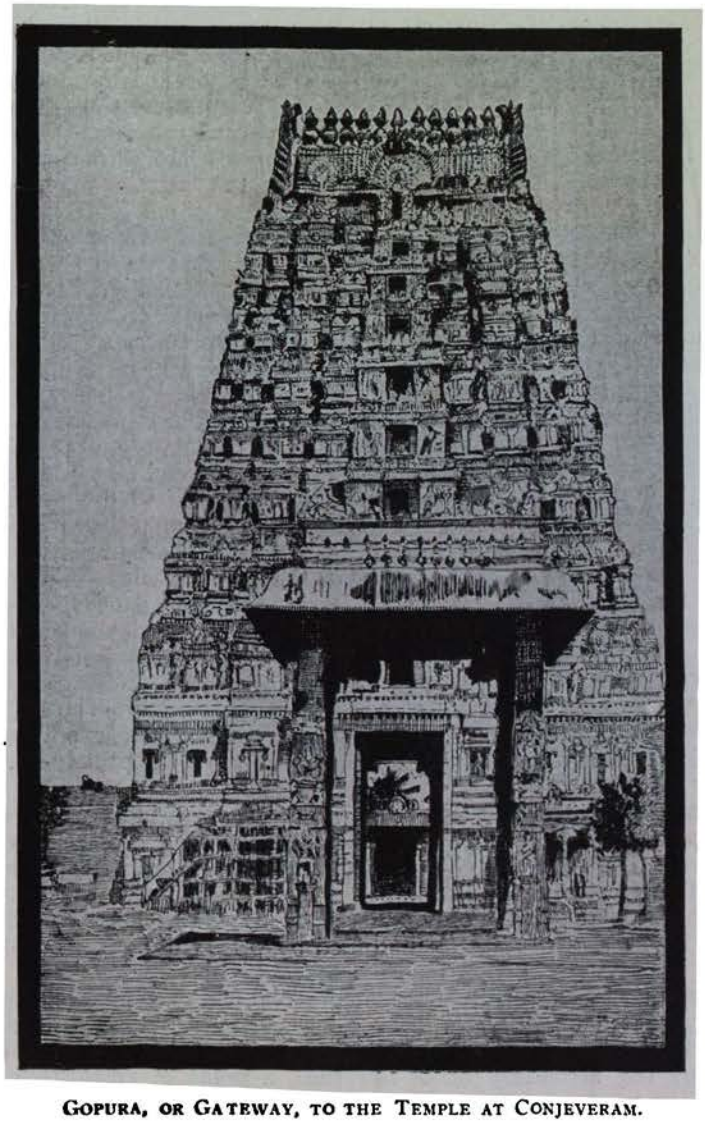
(Continued.)

DRAVIDIAN ART.

The Dravidians have inhabited the southern portion of the peninsula from time immemorial. No record, or even tradition, exists regarding the birthplace of the race, which in language and character differs from that of their neighbours, from whom they have, during the course of their history, kept apart and separate. The theory that they are of Turanian origin is chiefly based upon the numerous Assyrianisms that exist in their institutions and mythology; but when the close commercial connection between the Persian Gulf and the Malabar Coast from the earliest times is taken into account, it must be admitted that conclusions, supported by such evidence alone, are not entirely convincing. They presented a solid barrier to the conquest of the whole peninsula by the Aryans, although showing little power of expansion themselves; but between the 4th and the 7th centuries, one branch of the Dravidian race overflowed its northern boundaries, and conquering the Chalukyan kingdom, penetrated as far north as the Nerbudda river. They were subsequently driven back, but not before they had left behind them, as a magnificent record of their artistic genius, the Kylas Monolithic Temple at Ellora, an illustration of which appears in Volume I.

This outburst appears to have exhausted the fighting capabilities of the race, for they thenceforth sunk into the partial, or total, dependence which has been their lot to the present day. None of the other races of India, however, succeeded in absorbing them, nor did they even obtain an appreciable or permanent settlement in the country. The Dravidians always remained wealthy and powerful, and from about the year A.D. 1,000, buildings were erected which proved them capable of embarking in the most splendid architectural undertakings. These are exemplified in the Stone Temples erected at Madura Tanjore, Chillumbrum, Tinnevelly, and other places in the Madras Presidency.

Nearly all the existing buildings, however, are of comparatively modern date, the great building age in Southern India having been the 16th and 17th centuries. Some structural buildings, it is true, can be traced back to the 10th or 13th century with certainty, but beyond that, the dates are purely conjectural.



GOPURA, OR GATEWAY, TO THE TEMPLE AT CONJEVERAM.

It is generally accepted, however, that the Kylas at Ellora and the temples at Purud Kal are anterior to the 12th century and that probably the "raths" at Mahavellipur belong to the 5th or 6th century.

These latter, however, being cut from single blocks of granite, show no signs of wear or decay, and therefore afford no outward evidence of their age. They are five in number, and stand on the seashore, each being carved from a single block of granite. Externally they are all more or less finished, but in only one has an attempt been made to hollow out the interior. It is completely cracked through, and is unfinished, the work having been probably abandoned when it was found that the support left for the solid granite roof was insufficient. Comparison between them and the later

constructed temples, leave no doubt but that they gave the type to all the Dravidian religious edifices, although the grouping of the various buildings had not then been developed. In the Kylas at Ellora this step has been made, and the whole arrangement is as complete as at any future period.

Apart from its historical interest, the Kylas is one of the most singular and interesting monuments of the architectural arts in India. Unlike the Buddhist excavations, it is not a mere interior chamber cut into the rock of a hillside, but is as complete a temple as could be erected on the plain. Its sole drawback, from the point of view of its effect, being that in cutting the rock around it to provide an exterior, the whole has necessarily been placed in a pit. A trench was cut into the sloping side of a hill, in the form of an oblong, to the depth of about 100 feet at its innermost side, leaving the outermost wall of rock intact. From the central mass, the earth was removed and a complete temple has been fashioned; the exterior and interior being most elaborately carved. The outermost wall has been pierced and wrought into the form of a gateway, through which entrance is obtained into the temple and the court which surrounds it. Cut out of the surrounding cliff is a peristylar cloister with cells and halls in two, and sometimes three, storeys. Outwardly the "Vimana" resembles the "raths" at Mahavellipur, but is more refined in form, while the interior has been hollowed out, and is supported by massive piers. What strikes the beholder with astonishment is, that the whole is carried out in accordance with a perfectly thought-out design. On either side of the porch are two square pillars called "deepdans" or lamp-posts, and two elephants about life size, all cut out of the native rock.

Despite the calculations of Fergusson, that the actual labour involved in excavating such a monument, is less than that required to build one of similar dimensions, the impression produced by the Kylas is that of admiration for the mind, or minds, that could conceive such a work, and respect for the industry and tenacity of purpose that brought it to so perfect a completion.

We will now proceed to the temples of a later date, chiefly constructed of stone and brick, found only in the Southern portion of the peninsula.

They resemble in some respects, and yet differ in others, from those of the Hindus of Central and Northern India. They form more imposing groups; for beside the Temple proper, or "Vimana," they comprise a "Mantapa" or porch, and sometimes a considerable number of "Gopuras" or gateways, as well as a "Choultrie" or pillared hall.

The Vimanas are invariably square in plan, and rise in storeys gradually decreasing in size until the dome-shaped apex is reached. The Temple at Tanjore has as many as fourteen of these storeys, and rises to a height of nearly 200 feet. It is almost the only one in which the "Vimana" is the prinicpal object, round which the subordinate ones are grouped in such a manner as to make a consistent whole. In most instances the buildings have been aggregated together, as if by accident, and the temple which is the principal object is so utterly overpowered by the secondary ones as to destroy all appearance of design. The "Vimana" stands in a court surrounded by a high wall, externally quite plain, but ornamented internally by colonnades, and cloisters or buildings devoted to the service of the Temple. Entrance to this court is obtained through one or more gateways or "Gopuras," that at Seringham having as many as seventeen. The form of the "Gopuras" differs from that of the "Vimanas" only in being oblong instead of square in plan. This necessitates the abandonment of the circular crowning ornament, its place being taken by one cylindrical in shape. Some of the Gopuras are imposing structures; that at Kumbaconum, for instance, rising to twelve storeys. Both "Vimanas" and "Gopuras" are elaborately ornamented with carving, consisting of horizontal bands of niches, covering the walls of each storey. These horizontal bands are cut, in the centre of each of the four walls, by a vertical line of larger cells, supported by projections to right and left, which, decreasing in size as they ascend, are crowned by a winged ornament. Seen in the blaze of an Indian day, these buildings are not lacking in richness of effect, though the eye wearied by the innumerable shadows, cast from the multitude of carved details, looks in vain for the relief a plain undecorated surface would afford.

The most extraordinary structures connected with these Temples are the pillared halls, or "Choultries," which occupy positions within the enclosures or courts. Their uses are various; but the Nuptial Halls, in which the mystic union of the male and female divinities is celebrated once a year, are the most elaborate and extensive.

They sometimes consist of nearly 1,000 columns composed of close-grained granite, covered with sculpture from base to capital, with scarcely two pillars exactly alike. They lack, however, the sense of design and arrangement of the Jaina porches, the pillars being placed too close together, and at absolutely regular intervals. What impression of grandeur can be obtained from a forest of granite pillars, each formed from a single stone, and all more or less carved, they possess; but their want of design detracts painfully from the effect they might have produced. A certain number of pillars in the centre are sometimes omitted, but this is the only attempt on the part of their builders to break the monotonous lines of columns. Allied to these halls are the corridors, which sometimes occupy a large portion of the ground within the walled enclosure. That at Ramisseram is nearly 4,000 feet in length, the breadth varying from 20 feet to 30 feet, and the height being 30 feet. Their pillars are about 10 feet apart, and are most elaborately carved.

The most artistic features of the Dravidian style are the compound pillars, employed to support the stone roofs of the temple porches. They consist of a main shaft, upon which the great beams supporting the flat roofs rest. In order to lessen the width of the roof span, brackets are employed, and these are supported by pillars of lighter construction, attached at their bases to the main shaft. The effect is extremely graceful and original, giving an appearance of lightness and strength to the whole column.

Before proceeding to consider the Dravidian sculpture, a point of great archæological, and in a lesser

CARVED FIGURE AT MADURA.

degree of artistic, interest may be mentioned, namely, the undoubted similarity between these temples and those of the Egyptians. The gateways or "Gopuras," both in form and purpose, resemble the pylons of the Egyptian Temples as do the great "Mantapas" or halls of 1,000 columns, with even greater accuracy, reproduce their hypostyle halls.

Whether this is accidental, or whether both Egyptian and Dravidian Architecture sprung from a common origin, are questions which cannot at present be answered with any certainty.

Artistically, the Dravidian style, as exemplified in their constructed buildings, possesses more of the barbaric element than any other in India. Its forms are more crude, and the planning is less skilful, than in either the Jaina or Indo-Aryan style. The masses are ponderous, and the decorations lack restraint; and with the exception of the composite pillars before mentioned, it has added but little to the sum of beautiful ideas, in the architecture of the world.

CIVIL ARCHITECTURE.

No civil buildings dating before the advent of the Mahomedans exist in Southern India, and what is remarkable in a country of several kingdoms, frequently at war with one another, no fortresses are to be found. No cenotaphs to mark the burial places of the ashes of their departed kings adorn the vicinity of the ancient capitals of the Dravidian States, such as are found in Northern India. When, however, the Dravidians came into contact with the Mussalmans, palaces, kutcherries, and elephant stables, rivalling the splendour of their religious buildings and the palaces of their conquerors, were erected at Vijayanagar, Madura, and Tanjore. They bear not the slightest resemblance to the architecture of their temples, but are based entirely upon the Moghul style. That civil buildings must have existed before this period is probable, and their entire disappearance is to be attributed to the same cause which accounts for the destruction of most of the early edifices throughout India, namely, that they were built of wood.

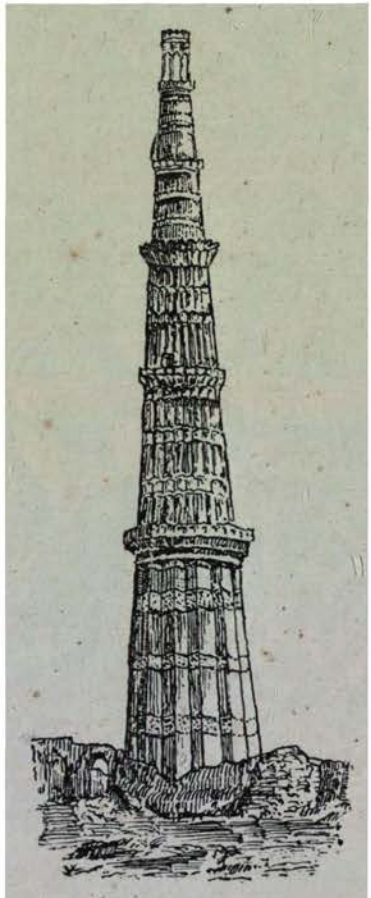
The hall of the palace of Madura is an example of unadorned simplicity, rivalling in this respect any of the Mussalman buildings found in India; while in other instances, such as that of the arcading of the court of the palace at Tanjore, are seen the exuberant details of the Dravidian carvers, superimposed upon the structural form of the Mahomedans. Before any composite style could be developed from the conjunction of these two opposing ideas, the advent of the European and decay of the Mussalman power destroyed it, and led to the introduction of Western styles, alien to both. Since then, in civil architecture, no pure style, either Western, or Eastern, has been developed, but buildings more or less commonplace and vulgar, containing mixtures of East and West, have been erected.

SCULPTURED COLUMNS IN THE TEMPLE AT MADURA.

DRAVIDIAN SCULPTURE.

Mention has already been made of the extraordinary diversity of outline and detail in the carvings of the pillars of the Nuptial Halls of the Temples. These are far too numerous to particularize, and it is only possible to describe broadly their characteristics. Patient labour, and almost incredible industry expended upon their production, they share with all Indian work; but they are chiefly remarkable for their wild imagination. When portraying the composite monsters made up of two or more animals, they make the works of the European sculptors of the grotesque in the Middle ages appear sane almost to dullness, by comparison. Of pure beauty there is but little, though on the other hand, there is none of the deadening repetition of the Northern Indian sculpture. Fancy here runs riot, usurping the place of order, symmetry or fitness. This wealth of imagination gives great spirit

to many of their individual carvings; and in those where single figures are attempted, this quality in a great measure compensates for their faulty modelling and proportions. Some of these figures bear striking resemblance to those of the early German sculptors, in their spirited portrayal of action; and, like them, arrest the spectator by their realism, but leave his sense of beauty untouched. These figures are the only form of Dravidian sculpture containing the seeds of progress. From them a living art could be developed, but their "grotesques" mark the finality of imagination carried to extremes. Nature has been discarded, and its study would only be a restraint. Beauty of line and arrangement might bring these grotesques within the realm of Art, but those two qualities are absent, and it is very doubtful if the race, as it now exists, is capable of developing them. All the evidence goes to prove that the artistic activity of the Dravidians, during their finest period in the 17th and 18th centuries, was the culmination of the power of artistic expression of the race, which in that effort exhausted itself, and is now as dead as any other style in India.



KUTAB MINAR, DELHI.

DRAVIDIAN PAINTING.

Colour appears to have had as little charm for the Dravidians as it had for the Indo-Aryans. There are certainly, upon the Kylas Temple, the remains of the painted ornament upon plaster, with which probably a great portion of the temple was covered. In very few of the modern buildings is it employed, either in conjunction with, or as a substitute for, carving. True it is that some of the carvings in the more modern temples and corridors have been daubed over with crude pigment. These vandalisms, however, so far from leading one to suppose that a taste for colour once formed an important item in the artistic equipment of the Dravidian race, point to the opposite conclusion, and support the opinion that painting, as as art, no more appealed to the taste and understanding of the people of Southern India than it did to those of the North.

THE INDO-SARACENIC STYLE.

The conquest of North-Western India by the Mussalmans in the 11th and 12th centuries, introduced into the country the first alien style in art since the Greek incursion under Alexander. Unlike the Greek influence, which was ephemeral, the art of the Mahomedans became firmly established, and is now the crowning glory of the peninsula. The general type of their architecture is supposed to have been derived from that of the Sásánian Empire, which flourished in Persia between A.D. 226 and A.D. 641. It varied in detail in different countries conquered by the followers of Mahomet between A.D. 632, when Syria first came under their dominion, and A.D. 1453, when Constantinople fell; but the style remained distinct. The differences in detail were partly due to the dissimilarities in the climate of their widespread Empire; but even more so, to the character of the local materials employed by their builders.

General Style of Mahomedan Architecture.

In Spain and other countries where good stone was not available, brick and plaster were employed for the structure and embellishment of their buildings. In India, where marble and red sandstone were to be easily obtained, they were freely employed, and resulted in the development of a more monumental style than that found in either Egypt, Spain, or Syria. Mahomedan buildings may be broadly separated into three groups, namely, mosques, tombs, and palaces; and in connection with the two last must not be forgotten the formal gardens which surrounded them.

Mahomedan Style in India.

The plans of their mosques are dictated by the requirements of their ritual. Thus their essential features are, an unroofed enclosure, rectangular in form, with a central fountain, or pool, for ablution. Around this court are placed roofed colonnades for protection against the heat of the sun. Upon the side facing toward Mecca, the colonnade is of extra depth, and contains the *Mihrab* or Niche, the *Mimbar* or Pulpit, and the *Dikka* or Tribune, whence the *Imam* reads passages from the Koran, and intones prayers. Entrance to the enclosure is obtained through a gateway, which in India is generally an important architectural feature. From certain parts of the court-yard rise *Minars* or towers, from which the *Mueddin* calls the Faithful to prayer. Domes, of varying height and diameter, rise from the flat roofs of the colonnades, and it is to these that the principal architectural effect of the mosques in India is due.

Mosques.

With the Mahomedans came the first race into India who did not burn their dead, but buried them. They also brought with them the practice of marking the resting places of their departed, by monuments. According to the importance or wealth of the dead, or his descendants, the tombs were simple or elaborate. The princes of the Tartar races made it a practice to build their own tombs during their lifetime; as people must who wish to ensure sepulchral magnificence. While securing this, they made use of the building during their lifetime, as a place of pleasant and cool retreat and recreation with their friends.

Tombs.

The usual process was for the king or noble to enclose a garden outside the city walls, entrance to which was gained through one or more splendid gateways. In the centre he placed a lofty square terrace, from which radiated four broad alleys, with marble-paved canals, ornamented with fountains and bordered by cypress and other evergreens, as well as by fruit trees. Upon this terrace he erected a square or octagonal building crowned by a dome, and in the more splendid examples with smaller dome-roofed apartments, while the four main sides were devoted to the doorways.

During his lifetime, the central hall, or *Barrah Durrie* was used as a festal hall; but at his death the founder's remains were interred beneath the great dome. Sometimes his favourite wife lay beside him, while the bodies of his family and relations were buried beneath the collateral domes. Perfect silence then took the place of festivity and mirth, and the care of the building was handed over to priests.

Palaces.

The Palaces were almost always fortified, and were built upon the bank of a river or lake. The outer walls were rectangular; the space within being occupied by ranges of buildings used by the garrison, as Halls of Audience, private apartments for the king, the zenana, with its gardens and baths, and a mosque.

Character of Mahomedan Decorations.

The character of the decorations of all Mahomedan buildings is, in theory, limited by the teachings of the Koran, which prohibits the portrayal of natural objects, including human and animal forms. In those countries where the Faith is most rigidly observed, this prohibition is strictly obeyed, and has led to the development of those intricate geometrical patterns, known as Arabesques. In India, however, a considerable latitude was allowed, and many of the most exquisite patterns in the buildings at Agra, Delhi, and Ahmedabad, are based upon flowers and trees.

GHAZNI MINAR.

The above are the general characteristics of the art and architecture of the Mahomedans, and we will now proceed to a more detailed survey of the history and artistic achievements of the succeeding Moslem dynasties which governed India between the year 1193, and the final extinction of Mahomedan rule in 1859.

Pathan Style, 1st Period.

The first of these was the Pathan Dynasty, which, conquering North-Western India about the year A.D. 1193, held sway until they were displaced by the Moghuls in A.D. 1526.

The Pathan style was fully developed before the Mahomedans came to India; a specimen still being extant in the Minar at Ghazni. This was not a tower or minar attached to a mosque, but was a Tower of Victory. The earlier buildings of the Pathans in India show marked divergencies from the pure style of this minar. The reasons for this change were, that being a nation of soldiers, and at the same time very energetic builders, they were forced, when they first settled in the country, to employ Hindu craftsmen to carry out their designs. Being also in a hurry, they adapted to their own uses the colonnaded courts of the existing Jaina Temples, which they found ready to hand, contenting themselves with knocking off the carved figures with which the columns were decorated. This combination of the simplicity and largeness of conception of the Mahomedans with the elaborate and minute workmanship of the Hindus produced a style unique in its class, of which the arches at the Kutab and the decorations of the Kutab Minar at Old Delhi, and the great arch in the mosque at Ajmir, are the most famous examples.

Pathan Style, 2nd Period.

The second period of Pathan architecture was characterized by a reversion to a greater simplicity and restraint. A more stern adhesion to the precepts of the Koran may have dictated this, together with the fact that Mahomedan artificers were available, and that the supply of carved pillars from desecrated Jaina Temples had become exhausted.

Pathan Style, 3rd Period.

The third period marked a return to the elaborate detail of the past, but in place of a composite style, a more consistent one was naturally developed.

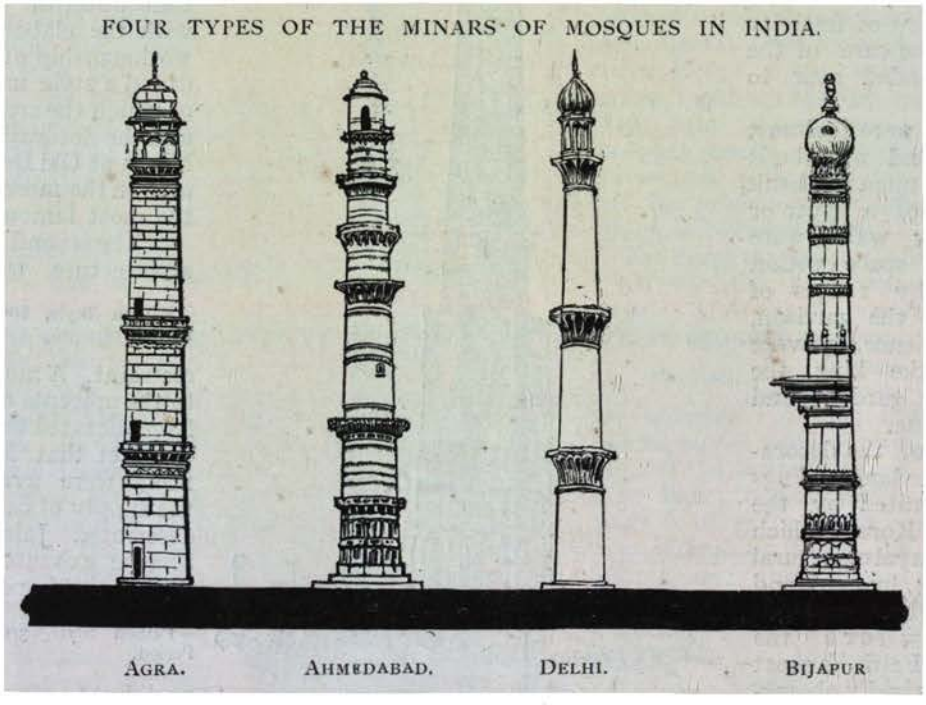
The only existing examples in Northern India of Pathan architecture of any importance, are mosques and tombs, the one great civil building being the Kutab Minar at Old Delhi.

The finest specimens of the first period are the mosque at Old Delhi and the mosque at Ajmir. Of the second period, the tomb of Shere Shah near Sasseram, the Kala Musjid in the present City of Delhi, and the Jumma Musjid at Jaunpore, while examples of the third period will be found in the many ruined tombs which strew the plains round Old Delhi.

The Mahomedan buildings in Ahmedabad are more essentially Indian in their character than any of the varieties of Saracenic architecture found elsewhere. The reason for this is, that although the Moslems conquered Guzerat, and Ahmed Shah set up his capital on the banks

of the Sabarmati, they never wholly subdued the rebellious spirit of their subjects, nor converted the bulk of them to their Faith. On the contrary, from an artistic point of view the Guzerathis conquered their conquerors, and forced them to adopt their forms and ornaments, which were superior to any known to the invaders. The mosques are Jaina in almost every detail. Arches, it is true, were inserted; but merely as symbols of the Faith, and not on account of their constructive necessity. The domes and minars are refined in form, and decorated out of all resemblance to those of Northern India; while the constructional methods are identical with those used in the building of the Jaina Temples. The two celebrated pierced stone windows have already been mentioned, the design of which is purely Indian, while the smaller mosques, especially that of the Rani Sipri, are scarcely recognizable as Moslem buildings. Again, it is only necessary to compare the minars in Ahmedabad, with their elaborately carved bases and bracketted galleries, with those at Delhi and Agra, to see at once how great was the influence of the Jaina builders upon the traditional forms of their rulers. The tombs show the same influence, those of Meer Abu Turab, Syad Osman, and Shah Allum being constructed upon the principles of Jaina architecture.

Ahmedabad.



This system is carried to its greatest extent at a place situated five miles from the city, where the remains of a magnificent collection of buildings can be seen. These include an almost perfect mosque, three tombs and a splendid palace, surrounding an extensive tank, access to which is gained by a noble range of steps. This group, which in its day could scarcely have been surpassed by any in India, is one which, even in its present state of desertion and decay, impresses the spectator by its combination of simplicity and elegance.

Sirkej.

Toward the end of their career, when Guzerat came more completely under the dominion of the Moslems, the architects of Ahmedabad reverted to the arched forms generally used by their brethren in Northern India and elsewhere. A tomb erected by Mahmud Begurra at Mahmudabad is a striking and beautiful example of this more solid and simple style, rarely if ever surpassed by any tomb in India.

An offshoot of the Pathans, the Ghori Dynasty, set up an independent kingdom in about the year A.D. 1401, and made its capital at Mandu, situated on an extensive plateau, forming a spur of the Vindhyas. Here for the space of one hundred and sixty-eight years, buildings of a most extensive and elaborate character were erected. The walls surrounding the plateau are more than 30 miles in length, while mosques, tombs, and palaces of the greatest magnificence covered the space within them. It has long since been a deserted city; its monuments rent by the luxuriant growth of climbing plants, or hidden in the recesses of an almost impenetrable jungle. At the instance of Lord Curzon, efforts are now being made to preserve the great mosque, and its two most splendid palaces, the Jehaj Mahal and the Baz Bahadur, from complete destruction. These buildings are monumental rather than elegant in style, and are more fascinating to the artist in their picturesque decay, than interesting as examples of architectural development to the archæologist.

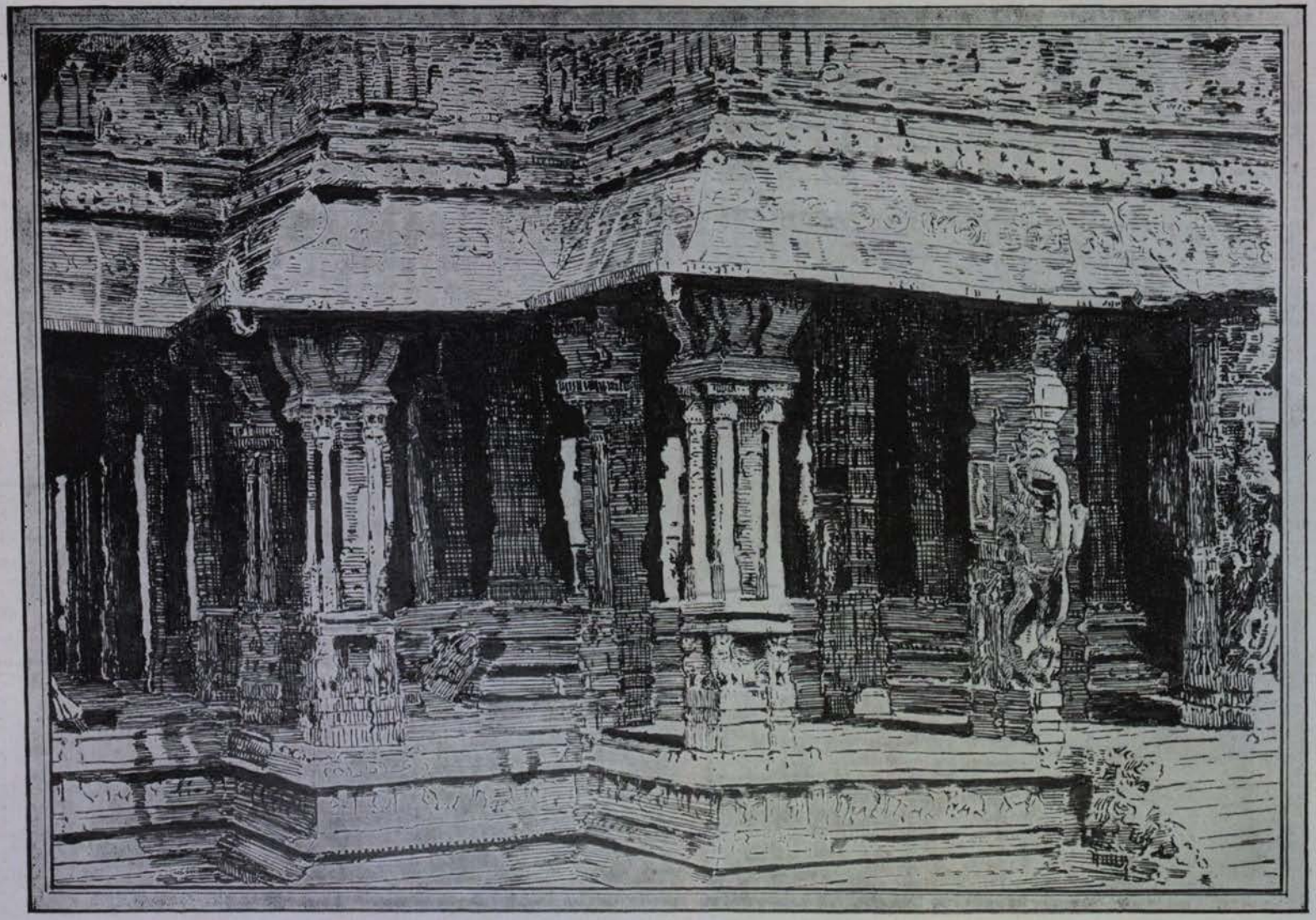
Mandu.

It has been before noticed that the presence of suitable building stone had marked influence upon the traditional Mahomedan style in Northern India. The absence of this material gives a local individuality to the buildings both in Bengal and Sind, where brick alone was available. Each of these provinces introduced a new feature into the style, besides developing variations in the shape of the pointed arch, as a result of their brick construction.

In Bengal, the new feature took the form of the curved roofs to the "Chattries" which crowned the angles of the buildings, already noticed in the section dealing with Indo-Aryan Civil Architecture. In Sind the variation adopted was in the style of decorating the surfaces of the mosques. In place of carving, tiles of great beauty, both as regards design and colour, were extensively used.

The Mahomedan Style in Bengal and Sind.

This method of decoration was undoubtedly derived from that of the Mahomedans in Persia, but it never took as firm a hold upon architects in India as it did upon the builders in the more Western portions of the Mahomedan Empire. Its possibilities were here

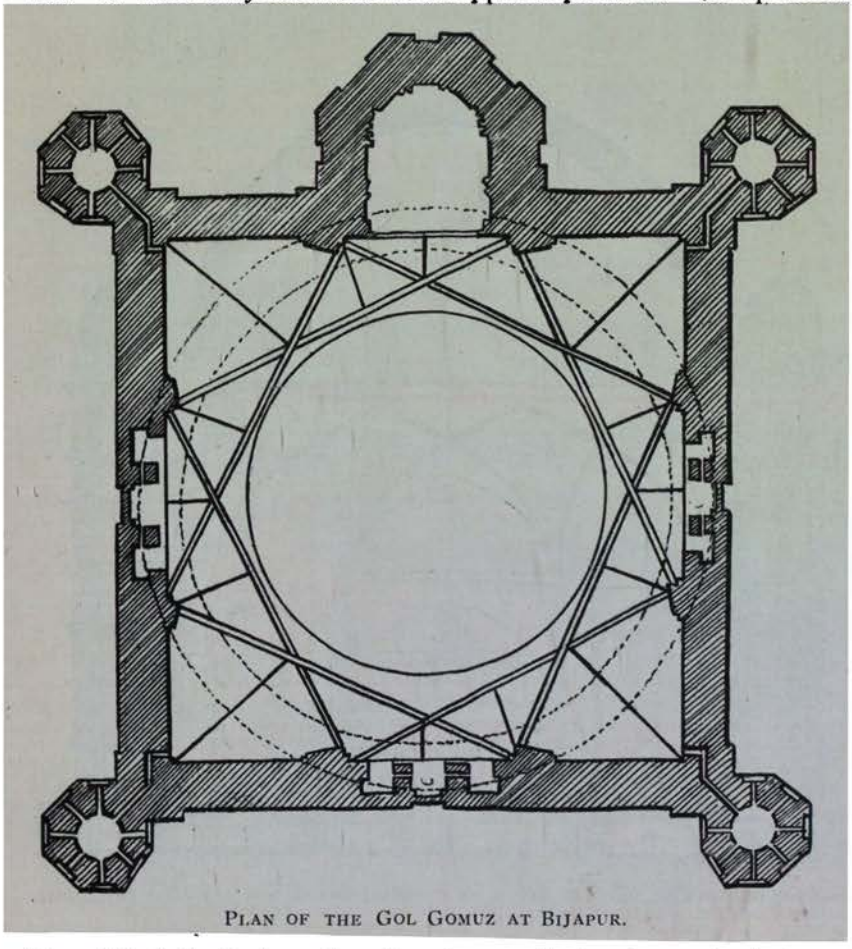


COMPOSITE COLUMNS IN THE TEMPLE AT BIJANAGAR.

overshadowed and thrust aside by the appreciation bestowed upon the more costly and permanent practice of inlaying marble with precious stones.

Painters who have seen the magnificent effect produced by the few existing buildings decorated with tile-work remaining in Sind and at Lahore, must regret this neglect, but at the same time must recognize the sound artistic instinct which rejected the employment of tile-work in combination with marble.

If few in number and widely separated, the Mahomedan buildings at Gaur in Bengal, and at Tatta in Sind, will be seen to hold not unimportant places in the interesting record of the various phases of Moslem Art. In India they influenced it at opposite poles: in Bengal, by introducing a form based upon the bamboo huts of the indigenous cultivators of the soil, and in Sind, by bringing it into touch with the artistic genius of the Mahomedans of Persia and Mesopotamia.



PLAN OF THE GOL GOMUZ AT BIJAPUR.

Of the monuments of the Mahomedan dynasties, which held successive sway over the Deccan from 1370 to 1672, the most remarkable are those at Bijapur. These are due to the building enterprise of the later kings of the Adil Shahi Dynasty; the great epoch being the hundred years between 1557 and 1657. During this period, their capital was adorned with a series of buildings as remarkable as those of any of the Mahomedan capitals of India. They showed wonderful originality in both design and construction, and a largeness of conception in some of their buildings, and an elegance in proportion, and an elaboration in detail in others, unsurpassed by those of Agra, Delhi, Jaunpore, or Ahmedabad, though differing from them in a marked degree.

Bijapur.

The Jumma Musjid was commenced by Ali Adil Shah in 1557, and though continued by his successors, and never finished, it is one of the finest in India. Although of splendid proportions throughout, and free from any Hindu influence, it is to the artistic shape and the constructional skill displayed in the building of the central dome of its Western colonnading that it owes its reputation. This would be even greater were it not surpassed in power and elegance by the two glories of Bijapur, the Gol Gomuz or Tomb of Mahmud, and the Ibrahim Rozah.

Jumma Musjid.

The Gol Gomuz, or Tomb of Mahmud, is one of the most remarkable buildings for simple grandeur and constructive boldness, not only in India but in the world. As will be seen from the plan, it is internally a square apartment 135 feet each way, and is larger in area than the Pantheon at Rome. At the height of 57 feet from the floor, the hall begins to contract by a series of ingenious and beautiful pendentives, to a circular opening of 98 feet in diameter. On the platform of these pendentives the dome is erected, 124 feet in diameter, thus leaving a gallery more than 12 feet wide all round the interior. Internally, the dome is 175 feet high, externally 198 feet. The most ingenious and novel part of the construction of this edifice is the mode in which the lateral or outward thrust of the dome is counteracted by the weight of the pendentives acting inwards, which form a sort of tie and keep the whole in equilibrium without in any way interfering with the outline of the dome. In the Pantheon a great mass of masonry is thrown on the haunches, which entirely hides the external form; whereas in the Gol Gomuz the weight is hanging inside, and consequently allows the outer form to be clearly seen. In the interior, only the simplest mouldings adorn the intersecting arches of the pendentives, and the ballustrading of the gallery is equally quiet in design. Nothing, therefore, tends to detract from the solemn impression of the wide and lofty vault, which spreads itself above the spectator.

The Gol Gomuz.

The exterior is equally impressive. At each angle stands an octagonal tower, eight stories high, simple and bold in its proportions, and crowned by a dome of great elegance. The walls are plain and solid, pierced only by such openings as are requisite to admit light and air. At a height of 83 feet, a massive cornice projects to the extent of 12 feet from the wall, above which an open gallery gives lightness, and finish to the whole.

In striking contrast to this building is the tomb of Ibrahim Adil Shah, which fascinates by its graceful proportions, the exquisite and elaborate character of its carving, and the quiet beauty of its setting. Admirably adapted as the Arabic characters are for the purpose of decorative inscriptions, in few buildings can they have been more finely treated than in the numerous panels which so freely adorn the exterior and interior of this tomb as to be said to include the whole of the Koran. The outer arcading has a deep cornice, supported by elaborately carved bracketing, and is crowned at each corner by a graceful minaret. The dome is more bulbous in shape than are those of the Jumma Musjid, or the Gol Gomuz, and rests upon a somewhat concave drum, wrought into likeness of the petals of a flower.

The Ibrahim Rozah.

Beside the tomb is a mosque to correspond, and the Royal gardens surrounding them are adorned with fountains and kiosks, and are flanked by colonnades and caravanseras for pilgrims.

The ruins of the palaces, in one of which can be seen the front of the great Audience Hall with its arch 80 feet wide, and of other civil buildings, among which may be especially mentioned the gateway known as the Mehturi Mahal, bear ample testimony to the fact that the civil buildings of Bijapur possessed the same noble characteristics as those displayed in the mosques and tombs. Of their extent and number, it is sufficient to say that they are thickly scattered throughout the area enclosed within the gigantic walls, which are 6½ miles in circumference.

Palaces at Bijapur.

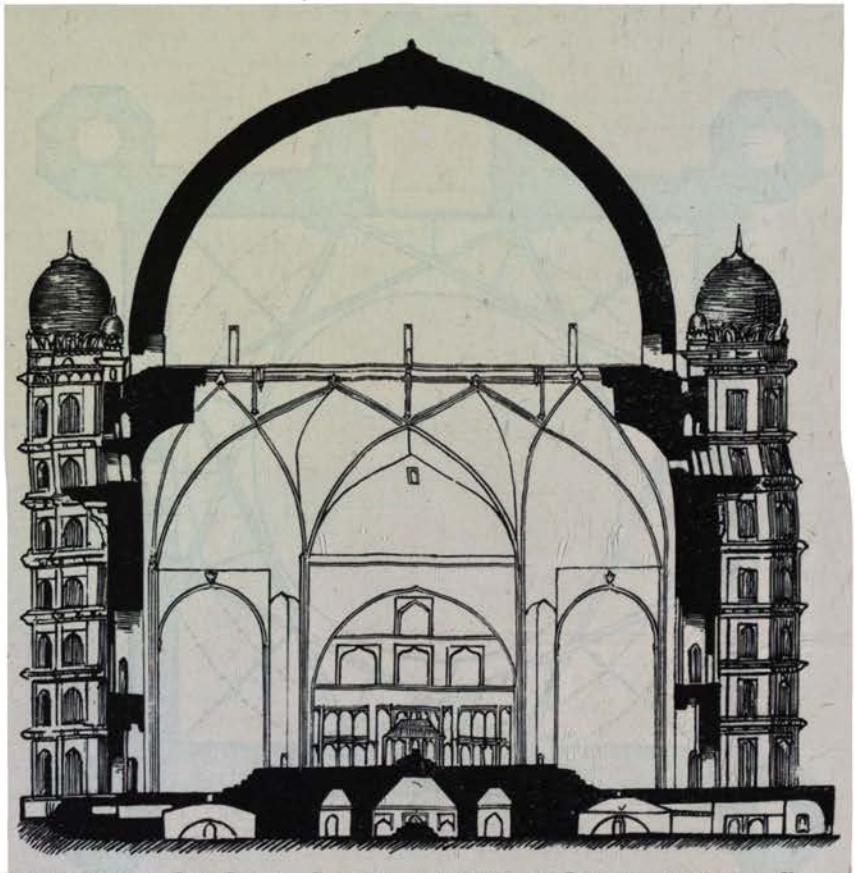
We now come to the culminating period of Mahomedan Architecture in India, that of the Moghuls. Little remains of the architecture of the last rulers of the Pathan Dynasty, or of that of the earliest of the Moghul invaders, although Baber, according to his own account, every day employed over two thousand builders and stone-carvers. A few buildings, ascribed to Humayun and the usurper Shere Shah and his son Selim, exist, but the great building period of the Moghuls does not begin until Akbar was firmly established in power. One of his first works was to complete the tomb of Humayun, his father, in Old Delhi, where it is now seen to be in a state of almost perfect preservation. It is severe in style, being almost destitute of ornament; but standing on its lofty platform it is an imposing and splendidly-wrought structure. His next building was the Red Palace in the Fort at Agra, which is purely Hindu in style and construction, but Moslem in its decorations.

Moghul Architecture.

Akbar, 1556—1605.

It is, however, at Futtehpore Sikri that Akbar must be judged as a builder. During his long reign of 49 years, it was his favourite residence. Here he erected a splendid palace, a series of exquisite pavilions, and a most noble mosque, the southern gateway to which is generally agreed to be the finest portal of its kind in India, if not in the whole world. Volumes have been written upon these buildings, but they still fail to give the reader any adequate idea of the profusion of thought, labour, and money which must have been expended, before they were brought to completion; this can only be realized by a study of this great work upon the spot. The fort and palace at Allahabad, and his own tomb at Secundra, near Agra, are two of the most important of the other buildings, which owe their existence to the genius of the greatest and most liberal minded of the Moghuls.

Futtehpore Sikri.



SECTION OF THE GOL GOMUZ, BIJAPUR; SHOWING THE COMBINATION OF THE DOME.

The reputation of Jehangir as a builder has suffered by comparison with the genius of both his father and his son, in this direction. It was unfortunate for his future fame, that the few buildings of importance erected by him should have had for their site the City of Lahore, which Jehangir made his capital. The Great Mosque was built by him, but is surpassed in interest by that erected by his Vizir, chiefly on account of the resplendently coloured tiles with which the surface of the latter is covered. The tomb in which Jehangir and his imperious wife lie buried was despoiled by the Sikhs, and used as a quarry, whence the marbles from which the temple at

Jehangir, 1605-1627.

Lahore.

Amritsar was built, while his palace has been altered out of all recognition, in order to meet the wants of successive occupants. At the other end of his dominions, namely, Bengal, Jehangir founded the City of Dacca, in supersession of the ancient capital of Gaur, and adorned it with buildings of considerable dimensions. Here again he was unfortunate, for in consequence of the nature of the materials used in their construction, nearly all these important edifices are now in a state of picturesque ruin.

Dacca.

A tomb at Agra, the Itimad-ud-daula, belongs to his reign, although not built by Jehangir. It has much intrinsic beauty, but its chief interest lies in the fact that it is one of the earliest, if not the very earliest, buildings in India, in which the decorations include coloured stones inlaid into white marble. Although no very direct evidence has been adduced to prove that this mode of decoration was introduced by Italian craftsmen engaged in the service of the Moghul Emperors, there can be little doubt that much of the mural ornamentation in the buildings of Shah Jehan was affected by European influence. It is known that Augustin de Bordeaux was employed by Shah Jehan, and the Mosaic executed by him of Orpheus, after Raphael's picture now in the Indian Section of the Victoria and Albert Museum, South Kensington, certainly once adorned the throne of the Emperor. It is equally certain that shortly before the date of this tomb, the Itimad-ud-daula, the system of inlaying, called "pietro duro" had been invented in Italy, and had become extremely popular throughout Europe. Placed in a setting of polished white marble, it certainly is a most appropriate, and beautiful method of decoration. The difficulties and nature of the process compel the adoption of a flat and decorative treatment of surfaces, and are such as to discourage the representation of human or animal forms. It is, on the other hand, a singularly appropriate method of treating arabesques and delicate foliated ornament. It was, therefore, likely to appeal in every way to the Moghul taste and tradition, while the patient industry required in its production was no obstacle to the mastery of its technique by the oriental craftsmen who had executed the elaborate carvings at Futtehpore Sikri, in the previous reign.

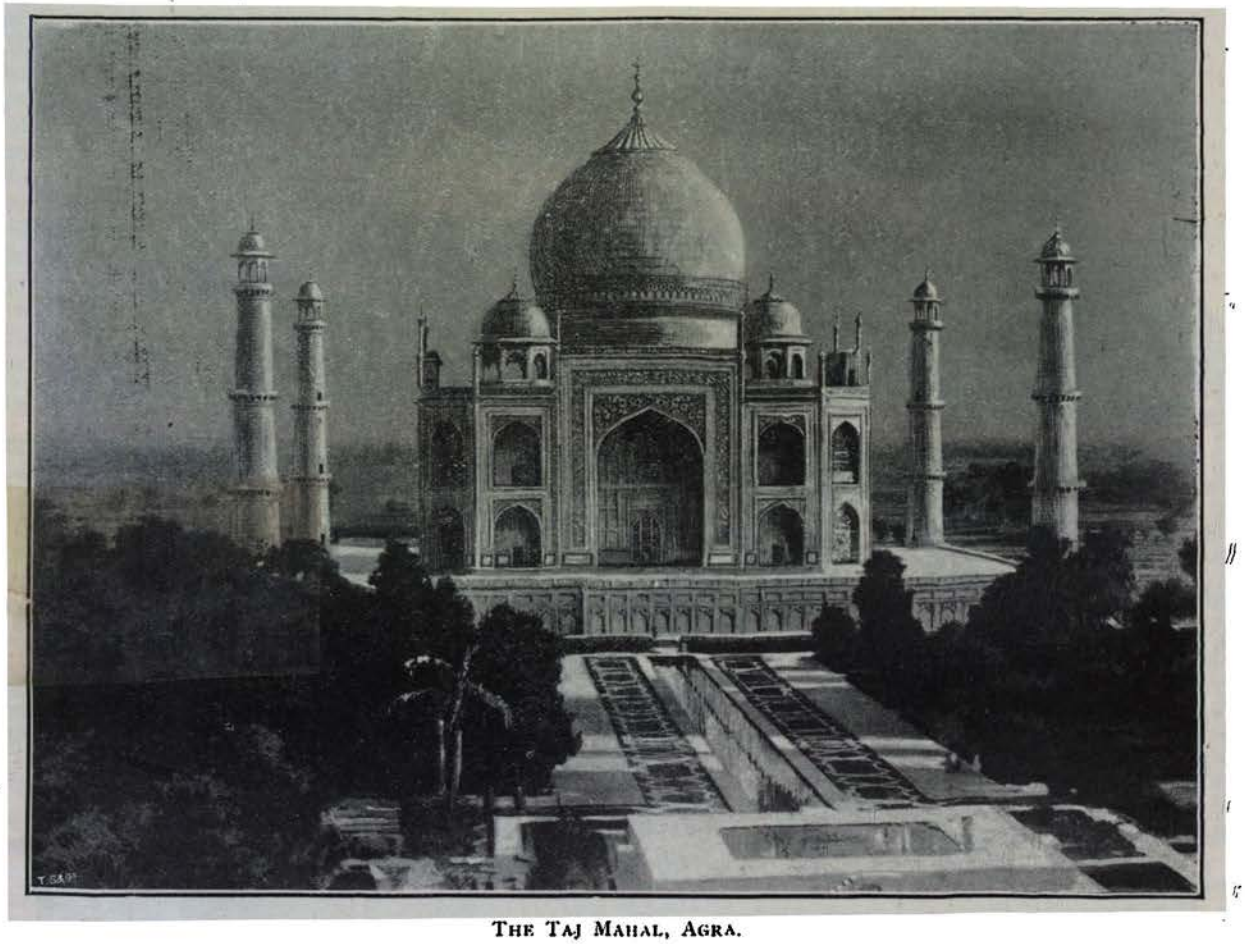
MAUSOLEUM OF ITIMAD-UD-DAULA, AGRA.

As the Moghul style, as a whole, shows the culminating point of Mahomedan architecture in India, so the buildings erected by Shah Jehan display the very apex and summit of that style. Like everything Oriental, the growth and development were more

Shah Jehan, 1628-1658.

rapid than in the case of Western architecture, but the development is characterized by the same progress from sobriety and massiveness to elegance and refinement, perceptible in the development of Gothic architecture in England. As Salisbury Cathedral is to Durham or Norwich, so is the Taj at Agra to the tomb of Humayun, or the mosque at Futtehpore Sikri.

As its development was more rapid, so was its decay more sudden and complete; and no glorious after-math, corresponding to the Tudor Chapels at Westmin ter or Cambridge, renders its end beautiful and venerable.



THE TAJ MAHAL, AGRA.

What a gap is there between the tomb of Rabia Duranee at Aurangabad, and the Taj at Agra; yet the former was built within 30 years of the latter. After that there is nothing except the vulgarities of the palaces of Lucknow.

Shah Jehan's buildings at Agra and Delhi, culminating in the Taj Mahal, are so well known, and have been the subject of such countless descriptions as to require no further recital of their glories.

The Taj Mahal.

The Taj stands alone in the world for certain qualities all can appreciate; but, like every work of art, its merits in one direction entail corresponding defects. Erected as a monument to the personal devotion of a husband to his wife, it is one of the most impersonal buildings in existence. It is one of the most complete buildings to be found, not only in India, that land of abandoned ideas, but in the whole world. This very perfection, and the sense of finality it produces, robs the Taj, in a measure, of the element of mystery, and of that suggestion of human effort which renders the unfinished reliefs of Michael Angelo more fascinating than his "David," or tempts the imagination to penetrate the mysteries of light and shadow in the façade of a Gothic Cathedral, such as Amiens. The instinct which prompts the visitor to see the Taj by moonlight is therefore a true one, for at that hour the masterpiece of Shah Jehan is invested with the mystery it lacks in the full glare of daylight.

Of its class, the Taj is perfect; but as to the relative artistic merits of the class to which it belongs, compared with the masterpieces of the West, such as the Parthenon, it is not possible to more than speculate. Technically and æsthetically, they may be considered equal, but the grand sculptures on the Parthenon rise to an intellectual level unapproached by the decorators of the Taj. No building in the East can bear comparison with it; and it is therefore fitting that the final words of the story of architecture in India should refer to the Taj Mahal.

The Minor Arts of India.

THE Arts hitherto considered have been those which have been directly the outgrowth of architecture. No account of the Art of India, however, would be complete without due mention being made of those widely practised arts devoted to the service of religion, or the adornment of the palaces or persons of the powerful, and wealthy. India has always been noted for the quantity of works dedicated to the one, and appropriated to the other; pious devotion to their gods and lavish display of wealth being pronounced traits in the character of the greater portion of the inhabitants of the peninsula. In all those artistic crafts depending for their quality upon patient workmanship, they have excelled in the past; but as, on the one hand, India has never produced great painters or sculptors, such as Leonardo-da-Vinci, Benvenuto Cellini, or other mediæval masters, whose training was begun in the workshops of goldsmiths and other craftsmen; so, on the other hand, the Indian craftsmen have never attained the level of the artistic taste of their Japanese confrères. With the exception of wood-carving, which has generally been associated with architecture, the most widely practised of the arts have been those of the goldsmith, the metal worker, and the weaver. The conditions of Oriental life in the past have governed this. Ornaments of precious metals have served the double purpose of occasional display and extremely portable property; advantages which forcibly appealed to every class of society in those periods of war and unrest in which India has been continually plunged from the dawn of her history to very recent times. The climate and habits of the people of India have naturally led to the development of textile manufacture, which has been made additionally easy by the growth of so workable a fibre as cotton within her borders. Wool was introduced by the races which entered India from the North, where the centres of weaving this material have generally been situated; while the origin of the silk industry is a matter of dispute among the various authorities interested in the question. The carving of ivory and horn, and the working of lacquer are, however, indigenous and widely spread industries.

Chief Artistic Crafts of India.

GOLD, SILVER, AND OTHER METAL WORK.

IT is not necessary, even if space permitted, to enter into any detailed account of the processes followed by the Indian craftsmen in the production of their works in the precious and commoner metals. They differ but slightly from those used by the Greek, Roman, and modern metal workers. The works are cast, hammered, encrusted, or engraved. They show one quality, directly due to the social conditions of the country, as compared with similar works found in more settled areas; that of greater massiveness and solidity. Where personal ornaments are prized for the intrinsic value of the metal they contain, this is always likely to be the case; and where the melting-pot is regarded as the probable destination of such articles, the quality of the workmanship expended upon them is of but secondary account. Destruction has undoubtedly overtaken the greater part of the Indian art manufactures of ancient times, used for secular purposes, and a knowledge of them is purely conjectural; but a comparison between the representation of the gold and silver ornaments of the gods and goddesses found upon the images in the rock-cut temples, and similar objects made at a later date, prove how little change has taken place in the character and uses of the various articles. The ornaments for the head, face, arms, and legs, seen upon those monuments, are reproduced with almost startling fidelity upon the persons of the Indian women of the present day. They may vary in detail, but the general character is the same. The different nationalities, races, and castes of India have traditional patterns, and these patterns vary in different parts of the country; but their manufacture is carried out by means of one or other of the processes mentioned above.

General character of gold and silver ornaments.

Similarity between ancient and modern types of ornaments.

The principal articles for household or ceremonial requirements are bowls, sprinklers and boxes, while extensive use is made of the precious metals in the embellishment of horse and elephant trappings, the enrichment of arms, and the decoration of thrones, maces, and other portions of the regalia used on State occasions. Many of these latter articles are very picturesque, and contain excellent workmanship, though very few will bear comparison, as regards the last mentioned quality, with the Corporation maces and plate of Europe, not to mention the Crown plate of England, Germany, France or Austria. The Indian jewellers are far behind those of Europe in the setting of gems. The use of hollow settings was almost unknown before their introduction from the West; the sheen and glitter of the gem being obtained by light reflected from tinsel placed behind the stone; while many fine stones are to be met with that have been utterly ruined by bad cutting, and by being pierced.

Indian Jewellery.

The art of enamelling was probably introduced from Persia. The only variety met with in India worthy to be considered as an art, is that known as "Champleve," in which the metal is engraved and chased in such a way as to provide depressions within which the colours are placed; the whole being then fired in a furnace, until the colours are fused. Jaipur and Lucknow have always been noted centres for silver and gold articles decorated in this manner. The varieties of metal work peculiar only to India are admittedly debased copies of finer, or more difficult processes, practised elsewhere. *Bidri* ware, for instance, is a coarse kind of substitute for true *niello* work, with a softer and less permanent material for its base; while the filling of the depressions in engraved brass and copper work with lac, is an easy method of overcoming the difficulties of true enamel, at the sacrifice of the best qualities obtainable from the combination of colour with those metals. Encrustation of one metal upon another, by means of which the Japanese metal workers have produced such marvels of technical ingenuity and artistic effect, has not been much practised by the Indian workmen, though fine specimens, in which the representation of silver gods and other ornaments are superimposed upon copper, have been made in past times in Mysore and Travancore, in Southern India.

Enamelling.

Bidri ware.

Lacquered Metal.

Encrusted work of Southern India.

The quality of the precious metals used for ornaments in India is always open to the suspicion of impurity, in consequence of the absence of any standard being observed, or guarantee being forthcoming, such as is given by the Hall Marks on English plate. Suspicion is enhanced on account of the proverbial failing of the "Sonar" to observe the ordinary dictates of commercial morality. This militates seriously against the reputation of Indian gold and silver work among connoisseurs, and is an obstacle to any improvement in the quality of the workmanship. For the protection of the buyer, and in the true interest of the craft, it is most desirable that guarantees, similar to those given in England, regarding the quality of the metals used, should be introduced into India.

Inferior quality of precious metals in India.

The great mass of the metal work specially devoted to the service of the temples, takes the form of cast or hammered images of the various deities of the Hindu Pantheon, lamps, chains and bells. Many of these articles show an advanced knowledge of the science of metal casting. It is doubtful if the waste wax or ***cire perdu*** method of the European and Japanese casters has ever been extensively practised in India. The usual method appears to be to make a model of the image, and to first cast the object in two halves in some soft metal, such as lead. These halves are then worked up in detail and chased, and are pressed separately into the prepared sand held in the two halves of an iron casting box. These are joined together and the molten metal poured in. When the cast is taken from the mould, it is often elaborately chased, and engraved, while in many instances jewels of great value are set in the eyes of the god or goddess, and in the ornamental details. These images of the Hindu gods naturally follow the types of the stone carvings on the exteriors and interiors of the temples. Occasionally, an image may be met with showing more freedom of action than is the case with its stone prototype; but the attraction of these figures, whenever they possess any, is owing to their fantastic, archaic, or barbaric qualities rather than to their purely artistic ones. The lamps, chains and bells often contain excellent cast work, and are extremely picturesque in effect and ingenious in design.

Images in Temples.

Indian brass and copper casting.

In form, many of the beaten articles of indigenous origin, such as "pan boxes," lotas, bowls, rose-water sprinklers, etc., are very fine, and the older ones show considerable artistic taste with regard to the quantity and disposition of the ornaments placed upon them. The same applies to many of the older specimens of jewellery, such as anklets and bangles; but the smaller articles are characterized by the fault displayed in so much of the craft work of India, namely, over-elaboration. Another fault which is noticeable in the metal work of India, a fault which runs through the whole of their art, is the apparent insensibility of the workmen to what may be termed the peculiar adaptability of each separate material to artistic expression. This has not always been observed by European craftsmen, but is characteristic of the best periods. It has been before noted that the early stone-carvers imitated exactly the technique of the woodcarvers, who preceded them; and the same rigid and hard treatment of metal is followed by the metal workers as is adopted by the workers in stone. The beautiful flowing and bulbous forms, in low relief, growing out of the background, found in the mediæval metal work of the Italians, and the clean cut vigorous workmanship of the German Gothic woodcarvers, is looked for in vain in any Indian work. The same hard outlines, and more or less deeply incised backgrounds, are seen repeatedly, in their stone and wood-carving, as well as in their metal-works.

Hammered metal work.

Uniform treatment of all materials by Indian craftsmen.

A description of the metal work of India would be inadequate if it failed to make mention of one of the most remarkable of the remains of the past to be found in the country. This is the wrought iron pillar to the south of the City of Delhi, near the Kutab Minar. Its total length is fifty feet, only twenty-two of which, however, appear above the surface of the ground. It is wrought in one piece and its weight is six tons. How it was forged and erected at a time when mechanical appliances were so defective, has never been satisfactorily explained. Its exact composition appears to be also a mystery, for in spite of being to all appearance, iron, it shows no disposition to rust or oxydize. The remarkable bronze cannon found throughout India also call for mention, but many of them, that for instance at Bijapur, were cast by Europeans in the service of the Mahomedan kings, and cannot be considered purely indigenous in their origin.

When all its artistic failings have been admitted, the ancient metal work of India had a character of its own, born of the intellect and requirements of the people. India was for centuries removed from outside influences, except such as were eventually absorbed into the corporate body of her life. With the opening of her ports to the influences of modern art and commerce, and with the gradual change in the habits, and the extensions of the needs of her wealthier classes, her indigenous forms have become debased by being applied to articles foreign to their traditional uses. At the same time, the decorations have become mixed with alien styles, until at present scarcely any purity exists in the metal work produced by native workmen. To meet the competition engendered by the influx of machine-made articles from abroad, the workmanship has become slovenly, owing to the vain attempts of the craftsmen to produce the same apparent amount of design upon their goods, in a much shorter time. Consequently, the metal work of India has reached a state of debasement at the present time, such as it probably never experienced in the past. The Government of India and the local Governments are striving, by means of the establishment of Schools of Art, to bring about a better state of affairs; but many years must elapse before the public and the craftsmen of India are trained to appreciate the value of simplicity in form and restraint in decoration to which so much of the best modern work in Europe owes its beauty.

Textiles.

The evidence of the earliest sculpture found in India, goes to show that long before her history obtained any written record, the crafts of the weaver had reached a high state of development. No specimens of the ancient textiles have come down to us, as they have done in Egypt. We therefore have to conjecture from the representations of drapery shown in the ancient carvings, and in the paintings at the Caves of Ajanta, what the fabrics of that period were like. There is little reason to suppose that they would have suffered by comparison with the products of a later date, when India became more intimately known to the nations of Western Europe. The favourable conditions for the production of fine textiles were the same from the earliest times, until those conditions had been modified by the invention of mechanical appliances in Europe. These favourable circumstances were, a nation with a genius for designing intricate patterns and for patient labour; an ample and cheap food supply; an indigenous fibre capable of being worked up into the finest of webs; and in many parts, a climate peculiarly suited to delicate workmanship. In countries where wool and flax were the only raw materials used in textile manufacture, it is easy to understand the astonishment and wonder with which the filmy products of the looms of Dacca were regarded, while the cheap living of the Indian artisan enabled his plain and printed calicos to be sold in markets that were closed to the more expensive silken fabrics of the nearer East. The Indian weavers had an additional advantage in possessing an ample indigenous supply of the substances used in dying, such as lac, indigo, saffron, and madder. Dacca has always been famous for the fineness of its cotton fabrics. They have been surpassed in delicacy, in recent years, by tissues made by machinery in England; but the more elaborate specimens still hold their own in the limited market still available for their disposal. The extreme tenuity of the thread used in these muslins may be realised, when it is stated that the proportion of length to weight has been proved to be as much as 250 miles to a single pound of cotton, while so great is the labour entailed in weaving these delicate filaments, that the manufacture of a single length of 10 yards takes the combined labour of two weavers for the space of five months to complete. The yarn sometimes costs as much as Rs. 50 per ounce, and the finished fabric has cost as much as Rs. 500 to Rs. 600 for a single piece. It is only during the monsoon months that these delicate threads can be spun, and the materials woven.

Antiquity of the craft of Weaving.

Cotton Weaving.

Circumstances in its favour in India.

Dacca Muslins.

The only other woven cotton fabrics calling for particular attention, which have not been surpassed by the products of the looms of Lancashire, are the Jamdani or figured muslins, which have been sold for as much as £5 per yard. Their manufacture is a most elaborate process, and is more in the nature of loom embroidery than of direct weaving, the characteristic appearance being that of a rich and opaque pattern, placed upon a delicate and transparent web. It is impossible to do more than mention the important and striking part played by the dyer and the calico printer in relation to the cotton fabrics of India. The brilliant and picturesque colour effects, for which the streets of Indian cities are renowned, are due to his industry, and the inherent love of bright clothing among the people.

Jamdani or Figured Muslins.

The cotton weaving industry is undergoing a marked and rapid change in India. In every cotton-growing district factories are being built, fitted with modern machinery driven by steam power. Instead of being widespread, the industry is becoming concentrated, and is likely to become more so, despite recent efforts made to enable the village handloom weaver to successfully compete with the factories, by the introduction of improved appliances. Bombay and Ahmedabad are the chief centres of the cotton spinning industry, which is carried on also throughout Western, Central and Southern India.

Change in the Industry.

The silk industry was not an indigenous one, but was largely fostered, if it was not actually introduced, by the East India Company in the 17th century. It is a material that has appealed more to the Mahomedan than to any of the other races of India, and many gorgeous garments dating from the Moghul period, still exist to testify to the skill of the Indian weavers. The gold brocades, or "Kinkhabs," are, many of them, fit to compete with the best contemporary products of the looms of Flanders, Italy and France, while the pure silken fabrics are remarkable for richness of colour and great technical ingenuity.

Silk.

General Extinction of the Industry.

The handloom silk weavers are being gradually driven out of the world's markets, by the competition of the factory-made goods of Europe and Japan; while the establishment of mills in India is likely to hasten their extinction, except for such textiles as are in very limited demand by particular sections of the community.

Benares, Ahmedabad, Surat, Murshidabad, Madura, and Mysore, are the chief centres of the handloom industry, while mills are successfully carried on in Bombay and Poona.

Wool.

Of all the woollen products of the world, none have perhaps been so famous as those of Kashmir. The reputation of the shawls made in that Valley, and subsequently in the Punjab, has been justly very great. In many

Kashmir Shawls.

respects, no more beautiful fabrics have ever been made, but the industry has been practically ruined by the cheap and crude imitations manufactured in Paisley during the last 50 years. In all other classes of woollen goods, the weavers are outclassed by their more intelligent rivals of the West, although successful factories have in modern times been established in Northern India, notably at Cawnpore.

Exception might be taken to the above sentence on account of the considerable trade in woollen pile carpets which now exists at Amritsar, Kashmir and other centres, principally in Northern India. Woollen

Carpets.

carpet-weaving, however, is not an indigenous Indian industry. It was introduced by the Mahomedan conquerors from Central Asia and Persia, where the finest wool for the purpose is grown. A celebrated factory was established by Akbar at Lahore, whence came some of the finest ancient carpets found in India, as well as the splendid and interesting specimen which adorns the walls of the Girdlers Company, in the City of London. The designs, when pure, are almost entirely Persian in origin, but many modern carpets, copied from fine originals, are entirely spoiled by alterations in their proportions, and the introduction of incongruous details. The worst faults in the modern Indian carpets are those of colour. In this respect they fall far behind similar products of Persia and Asia Minor.

Embroidery.

It only remains to mention Indian embroidery to complete the sum of artistic textile work produced in India. As elsewhere, this art may be broadly divided into two divisions—bold work with cheap materials, and fine work with silk. Interesting work has been done in each of these branches in India. The Kashmir embroidered shawls display extraordinary evidence of patient workmanship, and have been known to deceive experts, who have mistaken them for the woven variety. This is the only embroidery in India comparable with similar work by the Chinese and Japanese. The rest of the Indian embroidery is far below it, and fails to reach the technical standard of the best mediæval work of Europe, while as regards ideas and taste in colour, it takes a decidedly lower place than any of the foregoing. It has, however, a distinct character of its own, which it should be the endeavour of the authorities to preserve, for this is essentially an industry in which the cheapness in living of the Indian craftsman gives him an advantage in the world's markets over his Western rivals.

CARVING, PAINTING, ETC.

Ivory and Sandalwood Carving.

Ivory has always been extensively used in India for the decoration of furniture and cabinet work. Southern India is noted for it, as well as for elaborate carvings in sandalwood. Much of the carved-work executed in Mysore and Travancore is both spirited in design and excellent in finish. In style it follows closely the lines of the carvings on the Dravidian Temples, but some of the more modern examples contain carved panels in which hunting scenes and landscapes are represented with a considerable degree of realism and delicately cut detail.

Ivory is largely used in the Bombay inlaid work in combination with ebony, stained wood and white metal, and it forms the basis upon which the Delhi and other miniatures are painted.

Miniatures.

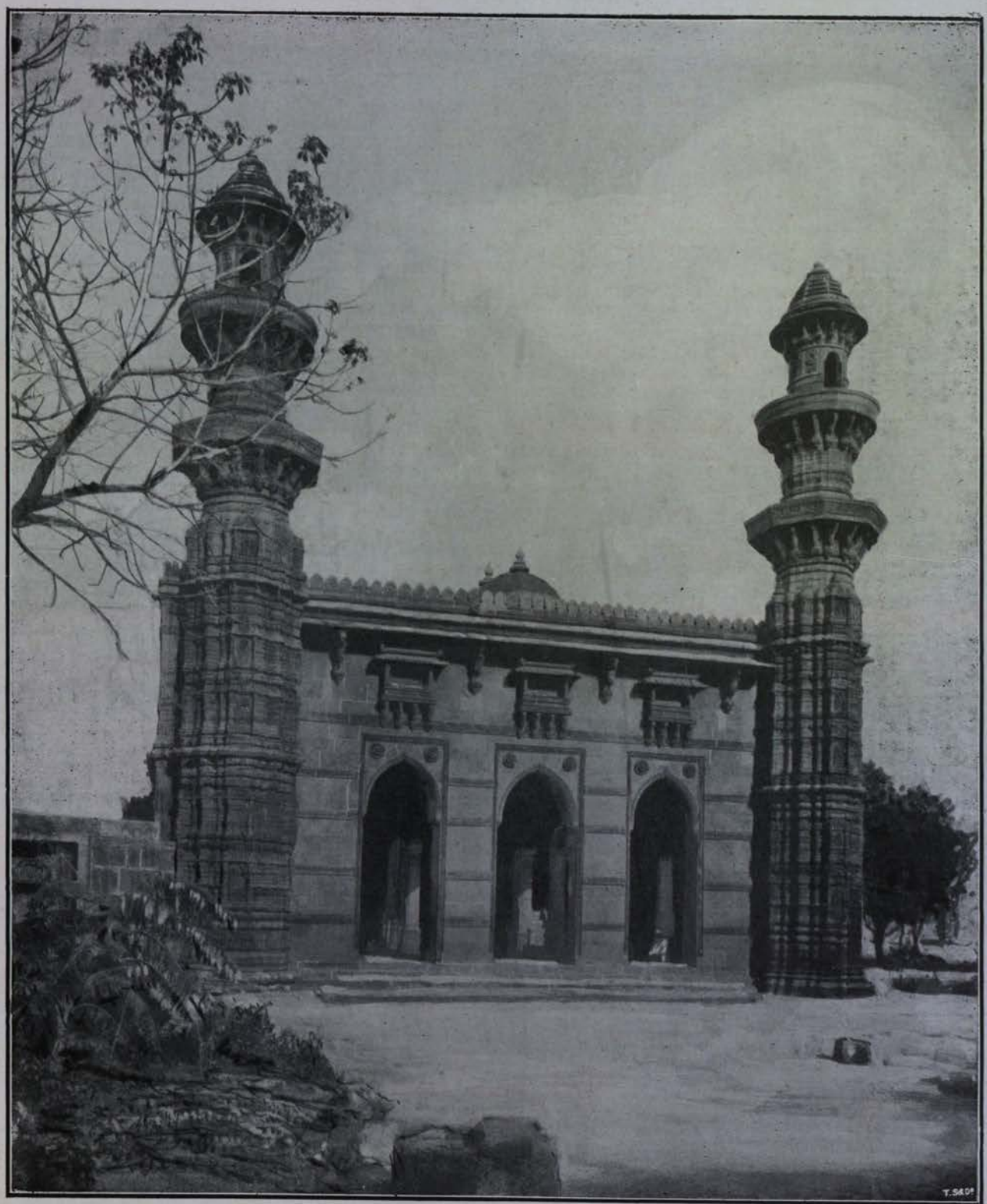
These miniatures are the modern representatives of the old paintings illustrating the Korans and Manuscripts of the Moghul times. They show a great falling off from the originals, the best of which are fit to be placed beside the beautifully illuminated writings of the monks in Europe during the 11th, 12th and 13th centuries. The art was brought to India by the Mahomedans, and is Persian in its origin. Many exquisite examples of single pictures are to be seen in the Calcutta School of Art, while a splendid collection of complete books is among the Art treasures of Jaipur and Ulwar.

Illuminated Manuscripts.

The decorative borders of the pages, executed in colour and gold, are wrought with the utmost ingenuity, taste and care, while the Arabic and Persian texts are beautiful specimens of caligraphy.

Pottery.

Pottery is the only art remaining to be noticed. The examples extant, coming within that term, are also of Persian origin. The tile-work on the mosques in Sind and the Punjab have already been referred to, as being exceptionally good in design and colour. The panels, containing texts from the Koran and surrounded by ingeniously designed borders, are often very fine; but as regards the colour, it is a question as to how much the influence of time upon the soft glaze is responsible for their mellow harmony of blue, white and green. Certain it is, that the modern work especially fails in this respect, although there appears to be little difference in the materials employed and the empirical methods followed in the processes upon which the result depends. The body in Indian pottery is always defective when compared with the products of the Chinese, Japanese, and European kilns, and true porcelain is unknown. The art, therefore, lacks the variety, and extraordinary finish distinguishing the specimens from the Far East and the West, and this has reacted upon the artistic quality of the result.



MUHAFIZ KHAN MOSQUE, AHMEDABAD, SHOWING THE JAINA CONSTRUCTION AND DETAILS.

Conclusion.

To sum up the art and architecture of India, and to place it in its true position with reference to that of the extreme East and the West, is no simple matter, and can only be suggested in the small space available. It shows certain of the qualities of each, but cannot be said to have attained to the supremacy of either. The rugged grandeur of the Buddhist period might have been the forerunner of as perfect a manifestation as that of Greek art, which was the outcome of the monumental styles of Egypt and Assyria; but it lost its way among the fantastic and composite forms of the gods of the Hindu Pantheon. There was, in the craftwork of the earliest period, nothing inimical to such purely æsthetic and superb technical developments as are seen in the work of China and Japan, but it stereotyped itself into set and lifeless forms. To the character of the people must be assigned the determining cause, acted upon by the climate of the country, and reacted upon by the religious influences developed. The patient Indian workman lacked the intellectual alertness of the European. His mind, when in action, was turned inward, and therefore was prone to select forms and types evolved from his inner consciousness rather than from the objects surrounding him. These forms, as a consequence, became stereotyped, and the craftsmen became insensible to the decorative possibilities of natural objects, which is so keenly realised by the Japanese and Chinese artists. The Hindu religion inculcated ideas of terror, rather than the serenity and beauty of the religions of the West, and as a result we have the distorted figures of the Hindu temples, in place of the calm beauty of the Greek, or the grace and pathos of the mediæval art of Europe. The dominating influence of religion was exercised more acutely and decidedly in the art of India than was the case in the Far East or West. Secular art, which played so important a part in the development of art in Europe and Japan, was practically non-existent in India before the arrival of the Moghuls, and was then placed completely under the limitations imposed upon it by the teachings of the Koran. This restraint, fatal as it was to the free growth of artistic ideas, had the same effect as the rules of poetic form have had upon the works of the great poets. By concentrating effort within narrow lines, it produced those masterpieces, which culminated in the Taj Mahal, the most complete and perfect work of art India has to show. Since its completion, little, worthy of the name of art, has been forthcoming, and the influence of Western ideals and modes of thought have, up to the present time, brought nothing but confusion and debasement upon such traditional art as has survived. The outlook for the immediate future of Indian art is most unpromising, and so far as can at present be seen, it will take generations to build up a new and national style based upon the climatic conditions of the country and the peculiar genius of the people, such as characterized so much of the ancient art and architecture of India.

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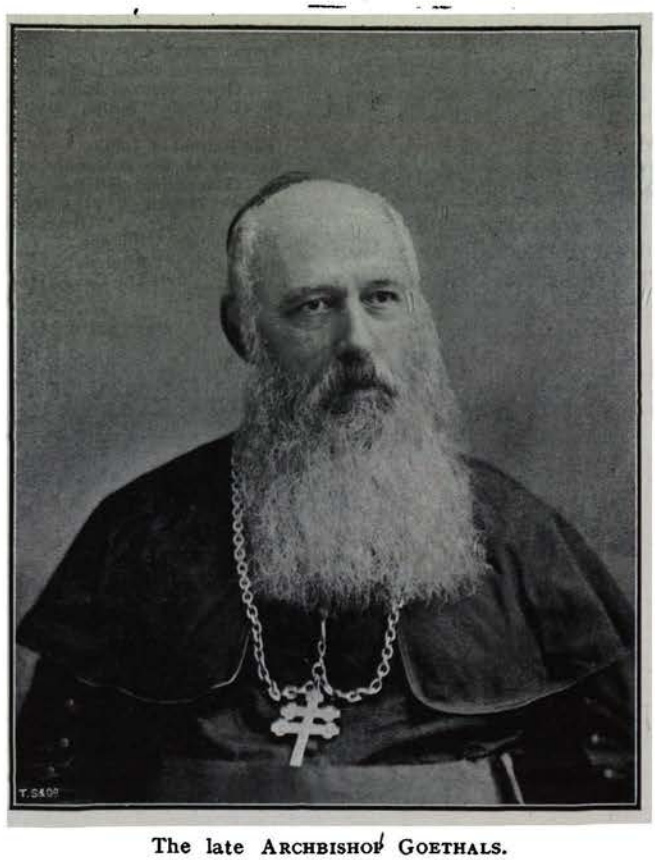
The

Roman Catholic Church in India.

(1) THE THOMAS CHRISTIANS AND THEIR RELATIONS WITH THE PORTUGUESE; (2) PORTUGUESE MISSIONARY ENTERPRISE; (3) PROPAGANDA MISSIONARY ENTERPRISE; (4) THE JURISDICTION-STRUGGLE; (5) THE ESTABLISHMENT OF THE HIERARCHY; (6) THE JURISDICTION-SETTLEMENT; (7) POPULATION, DISTRIBUTION, ETC.; (8) MISSIONARY METHODS; (9) NATIONALITY OF THE CLERGY; (10) SCHOOLS, INSTITUTIONS, ETC.; (11) CHURCHES, ARCHÆOLOGY, ETC.; (12) LITERARY ENTERPRISE; (13) LITERATURE OF THE SUBJECT.

(1) THE THOMAS CHRISTIANS.

Before the advent of the Portuguese in 1498, the history of Christianity in India is practically identical with the history of the Thomas Christians of the Malabar coast. According to a tradition tenaciously maintained amongst them, their conversion was in the first instance due to the Apostle St. Thomas who, landing at Cranganore, laboured first on the Malabar coast, and then passed over to Mylapore (near Madras) where he suffered death by martyrdom. This tradition is supported in part by the *Acta Thomæ*, probably dating from the second century, which tells how St. Thomas first preached at the court of one Gondophares [now identified as an Indo-Parthian king on the N.-W. frontier of India], and then passed on to other parts of India. The remains of St. Thomas, which were first interred at Mylapore, were later on transferred to Edessa, as St. Ephrem in the fourth century testifies; and later still, in the thirteenth century, to Ortona in Italy. The grave itself and certain relics are still shown at San Thome, Mylapore, as well as the scene of his martyrdom on St. Thomas's Mount, five miles away. Whatever view may be taken of this tradition, which contains nothing improbable in itself, at least the existence of Christians in India is witnessed to by the signature at the Council of Nice (A. D. 325) of "John, Bishop of Persia and Greater India"—though even here the term "Greater India" may be regarded as ambiguous. Another witness appears in Thomas Cana, who in the fourth century, or later, found a Christian Church flourishing in Malabar, and brought with him a colony of 400 Christians from Bagdad, Nineveh, and Jerusalem. But the date of this event is much disputed. The first definite authority, therefore, is Cosmas Indicopleustes, who in about A. D. 535 found Christian churches with their clergy in Ceylon, interior India and Male (Malabar) as well as a bishop at Kaliana (Kalyan, near Bombay). These Christians were under the Catholicus of Persia, and are generally supposed by that time to have become Nestorians. In the year 590, Gregory of Tours recounts the narrative of one Theodore, who had witnessed the feast of St. Thomas both in India and at Edessa. Shortly after this time it seems that, through a quarrel between the Persian and Babylonian Patriarchs, India was deprived of its clergy, so that in A. D. 650 the country is described as being in a state of darkness for lack of religious instruction. We read of the visit of a Jacobite Bishop in about A.D. 696. In the year 775 we learn that there was a clerical seminary at Kottaya, and that the Christians had a recognized position in the country. The Church of India is named amongst others in a Persian Synod of 852. An embassy was sent by King Alfred the Great to the shrine of St. Thomas in 883. Again, in 1129 we are told that the Catholicus of Bagdad sent a Nestorian Bishop called Mar John III to Malabar, but beyond these scanty details, history is practically silent about Christianity in India till the thirteenth century.



The late ARCHBISHOP GOETHALS.

A period of more frequent and connected records begins in 1293, when Marco Polo in his travels finds a colony of Christians at Malabar, and speaks of the body

of St. Thomas at Malabar. A Franciscan traveller of the same date, John of Monte Corvino, calls on his way to China at the Church of St. Thomas in India, where he finds a few Christians who are of little weight, and persecuted by their neighbours. About 1321, one friar Jordanus, accompanied by some companions of the Dominican and Franciscan Orders, landed on the Konkan coast, where he found some scattered Christians, unbaptised and ignorant of their faith. Jordanus went to Baroda; while his four companions, who remained at Thana, were put to death by the Moslems in 1322 (Martyrs of Thana). About the same year Friar Oderic arrived at the place, collected the bones of the martyrs, and then passed down the coast to Quilon, where he found Christians—and also to Mobar, where he saw fifteen houses of the Nestorians. In 1328 Pope John consecrated Friar Jordanus Bishop of Quilon, and sent him to the Nazarenes (as the Malabar Christians were called); but it is not known whether he reached his destination. About 1340 a Nestorian, Amr, son of Matthew, mentions the tomb of St. Thomas in the peninsula of Meilan. In 1349 Bishop John de Merignolli mentions the Thomas Christians at Quilon, and the tomb of St. Thomas at Malabar or Mirapolis. In 1425, Nicolo de Conte mentions the body of St. Thomas preserved at Malepur, and venerated by Nestorians. At this time it is said that the Thomas Christians on the west coast were sufficiently powerful to create for themselves a dynasty of kings; and in 1429 Pope Eugenius IV sent envoys to one of them (Thomas, Emperor of the Indians) whose subjects he describes as being true Christians. The embassy however did not reach its destination. Meantime the Christians on the east coast seem to have fled from Mylapore to Malabar to avoid persecution, leaving the shrine of St. Thomas to fall into ruin. This is intimated by some Nestorian bishops of Malabar, who had been sent out in answer to an appeal made by the Thomas Christians in 1490, and who in 1504 wrote to their patriarch describing the condition of things in India.

When the Portuguese reached India in 1498, they found the Thomas Christians an organized and powerful body, but accused them of Nestorianism in rite and creed. In 1530, missionaries were sent from Goa to Travancore to work for their conversion; and when the time was ripe, a great synod was summoned at Diamper in 1599, in which the Thomas Christians jointly professed allegiance to the Pope. A new See was established at Angamali in 1600 (transferred to Cranganore in 1605), and Jesuit bishops were placed therein to rule over the new community. However, a series of more or less domestic quarrels led to a serious revolt in 1653. In 1657 some Carmelite missionaries were sent from Rome to compose matters, and succeeded in bringing the great majority back to Catholic unity. On account of this success the Jesuit prelates were set aside and the Carmelites took their place, and the united Thomas Christians, despite occasional dissensions, have been true to their allegiance ever since. At the present time their total number amounts to about 350,000 who are under the jurisdiction of the three Vicars Apostolic of Trichur, Ernakulam and Changanacherry. On account of the use of a Syriac liturgy they are generally known as Syro-Malabarese or Syrian Catholics.

Of those who remained in a state of separation, the greater number soon fell under the influence of a bishop named Mar Gregory, sent out by the Patriarch of Antioch in 1665, and embraced the Monophysite or Jacobite doctrine. A certain number of them maintained at present a form of belief and worship somewhat akin to Protestanism, but no Nestorian sect is discoverable among them.

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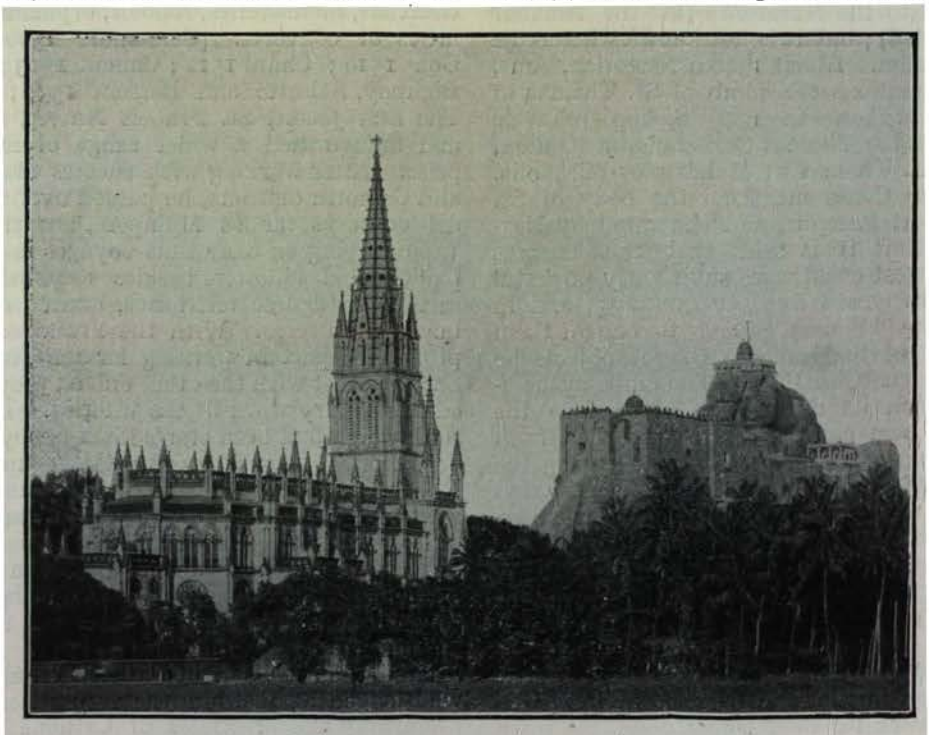
(2) Portuguese Missionary Enterprise.

Besides working for the union of the Thomas or Syrian Christians, the Portuguese devoted themselves to bringing over the Hindus and Mahomedans to the Catholic faith. From the year 1500, Franciscan, Dominican and Augustinian missionaries flocked to India, and gradually covered the Portuguese settlements with churches, monasteries, schools, orphanages and communities of converts. [Cannanore 1500; Cochin 1506; Goa 1510; Chaul 1512; Calicut 1513; Damaun 1531; Bombay, Salsette and Bassein 1534; Diu 1535, etc.] The first Jesuit, St. Francis Xavier, arrived in 1542, and inaugurated a wider range of missionary enterprise. After working with success along the Malabar and Comorin districts, he passed over to the Coromandel coast as far as Mylapore, and then to China and Japan, dying on one of his voyages in 1552. His companions and followers besides establishing themselves in the Portuguese territories, carried on his wider policy with success. With the Franciscans they took a prominent part in working for the Thomas Christians, but, together with the other orders, they also commenced missionary work in the interior. The Madura Mission, which had been started in 1596 by Father Fernandez, a priest from Goa, was taken up by the Jesuit Robert de Nobili on new lines in 1606. His policy was one of conformity to Indian habits of living, in order to break down prejudice and to bring the Hindus more directly under Christian influence. His methods proved successful—not among the Brahmins, of whom he converted very few,—but among others of the higher castes. But this mode of procedure soon excited the suspicion of Father Fernandez and others, who lodged against him the accusation of unduly compromising the principles of Catholic faith and practice. The question was investigated at Goa in 1616 and then referred to the Pope, who in 1623 gave a verdict substantially in favour of de Nobili. The dispute, however, was revived at a later date; and this, as well as a similar question which had arisen in China, was settled by a decree of Clement IX in 1715, clinched by Benedict XIV in 1742, which imposed certain definite restrictions on the kind of concessions to be allowed (Chinese and Malabar rites). Meantime, mission work in the Madura district grew and prospered; its ramifications spreading almost as far northwards as the river Kistna, with some sporadic efforts beyond it, especially along the river lines and coast lines, and to some extent even as far as Delhi, Pegu, Arracan, Bengal, etc.

The spread of missionary enterprise was naturally followed by a system of church organization. In 1534 Goa became a diocese suffragan to Funchal in Madeira, with a jurisdiction extending indefinitely over all past,

present, and future Portuguese possessions, from the Cape of Good Hope to China. In 1557 Goa became an independent Archbishopric, and a new suffragan See was created at Cochin. In 1600 a third See was created at Angamali (transferred to Cranganore in 1605) for sake of the united Thomas Christians; while in 1606 a fourth See was created at San Thomé (Mylapore, near Madras) having its jurisdiction extending over the Coromandel Coast, Crissa, Bengal and ancient Pegu (Burma). By frequently repeated declarations of Rome from 1534 to 1606, the patronage of these Sees was conferred on the King of Portugal, who together with the privilege of nomination took upon himself also the duty of endowment. This brought into existence the "Padroado" or Portuguese patronage, which figured so prominently in subsequent history, and gave occasion to a long-sustained jurisdiction-conflict, of which we shall now trace the origin.



CHAPEL OF ST. JOSEPH'S COLLEGE, TRICHINOPOLY.

(3) PROPAGANDA MISSIONARY ENTERPRISE.

The Congregation of the Propaganda is an institution founded at Rome in the year 1622 for the purpose of promoting the propagation of the Faith in Pagan lands. Its method of procedure is to send out batches of missionaries to various unworked countries, under the rulership of vicars apostolic, who derive their jurisdiction directly from the Pope. It was just at the time when this Congregation was founded that the power of the Portuguese in India began to decline. They not only ceased to acquire new territory, but gradually lost the greater part of what they had possessed (Ceylon 1656; Negapatam 1660; Bombay, by cession, 1661; Cranganore 1662; Cochin 1663, etc.); till they ended by retaining only Goa, Damaun, and Diu for themselves. With a decline of political power came naturally a decline of support for missionary enterprise. This and other causes, too complicated to be discussed here, led the Holy See, through the medium of propaganda, to take other and independent means to provide for the needs of the country. Missionaries were sent out to various parts of India, and a series of vicars apostolic were appointed. The Vicar of Malabar has already been mentioned (1657). But the earliest of them all was a Vicar of the Deccan in 1637, afterwards called the Vicar of the Great Moghul. When in 1718 the British Government of Bombay, for political reasons, expelled the Goan clergy from that island, the Vicar of the Great Moghul, with the approval of Rome, accepted the invitation to occupy their place, and thus became Vicar Apostolic of Bombay. This was followed by the appointment of a Vicar of Burma in 1722. In the year 1700 or thereabouts the Jesuits of the new French settlement of Pondicherry started a Mission in the Carnatic; and when the Society of Jesus was proscribed by the Portuguese Government in 1759, and suppressed by the Holy See in 1773, other French missionaries were appointed to work the vacated districts of the Carnatic as well as of Madura. In 1826 a Vicar of Thibet was established; in 1834 Vicars of Bengal, Madras and Ceylon; in 1863 Madura and Coromandel; in 1845, Agra, Patna and Jaffna; in 1850, Vicars of East and West Bengal, Pondicherry, Coimbatore, Mysore and Vizagapatam; Hyderabad in 1851; Mangalore, Quilon and Verapoly in 1853; Poona in 1854; Punjab in 1880; Kandy in 1883, etc.—and similarly in other eastern countries.

(4) THE JURISDICTION-STRUGGLE.

This action of Rome gave rise to a complaint from the Portuguese side that their ancient jurisdictions were being encroached upon. Already in 1659 Pope Alexander VII had proclaimed the principle that the right of patronage must lapse where its purposes were no longer fulfilled (cited in Meurin Concordat Qn., p. 4), and in 1673 Pope Clement X had, in various ways, asserted the rightful position of his vicars apostolic, and their freedom from Goan jurisdiction (cf. Bullarium Patronatus, Vol. II, pp. 133-136). On the other hand, the Portuguese party mantained that the royal patronage had been established by canon law and bi-lateral contract, and was incapable of recision except by mutual consent; that according to the terms of the grant it extended to all past, present, and future acquisitions of Portugal, and ought not to be curtailed; that, in any case, the Goan clergy were actually in possession of

many churches outside Portuguese limits, and ought not to be ousted from them, etc. In Bombay, from time to time (1786, 1794, 1812, 1813, 1819) efforts were made with the British Government to reinstate the Goan clergy who had been expelled in 1718; but without permanent result. In other parts of the country the vicars apostolic met with resistance wherever they tried to enter into possession of churches or districts occupied by the Goan clergy; and the situation was permanently strained. The conflict thus commenced has by many writers been called "The Indo-Portuguese Schism," "the Goan Schism," etc.; and the word "schism" was applied to the situation in several official documents issued at Rome. The term was, however, repudiated by the Portuguese party, on the ground that they were merely agitating for their canonical rights, etc.

In 1838 Pope Gregory XVI, hoping to put a stop to the conflict by a clear exercise of his authority, issued a Brief suppressing the Padroado Sees of Mylapore, Cranganore, and Cochin, subjecting their territories to the jurisdiction of the nearest vicars apostolic as their only legitimate ordinaries. This measure, instead of having the desired effect, only made matters worse; and the result was a fresh outbreak of resistance which went on for years without intermission. In 1857 the Holy See partially yielded to the exigencies of the time, and a Concordat was drawn up, which, while partially allaying the conflict, failed to issue in satisfactory results. In 1886, Pope Leo XIII determined to take the whole matter in hand with the object of a final settlement. A new Concordat was entered into between Portugal and the Holy See, by which the Sees of Cochin and Mylapore were reinstated and a new diocese (that of Damaun) established and comprised under the province of Goa, which thus includes three dioceses, entirely in British territory.

(5) Establishment of the Hierarchy.

At the same time it was decreed by Pope Leo XIII that the whole of India and Ceylon should be placed under a properly constituted hierarchy. Mgr. Agliardi, as Delegate Apostolic of the Indies, was appointed to execute this scheme; and his work was afterwards carried on, first by Mgr. Ajuti, and then by Mgr. Zaleski, the present Delegate Apostolic, whose residence is at Kandy in Ceylon. The new hierarchy consisted of eight provinces; that is to say, eight archbishopries, each surrounded by a group of bishoprics, vicariates or prefectures apostolic. This organization, after a few subsequent adjustments, now stands as follows:—

(i) The Archbishopric of Goa, with its suffragan Sees of Damaun, Cochin and San Thoms of Mylapore [padroada jurisdiction].

(ii) The Archbishopric of Calcutta, with its suffragan Sees of Krishnagar and Dacca, and the prefecture apostolic of Assam. [This and all that follow are of propaganda jurisdiction.]

(iii) The Archbishopric of Madras, with its suffragan Sees of Vizagapatam, Hyderabad, and Nagpur.

(iv) The Archbishopric of Bombay, with its suffragan Sees of Poona, Mangalore, and Trichinopoly.

(v) The Archbishopric of Pondicherry, with its suffragan Sees of Mysore, Coimbatore and Kumbakonam.

(vi) The Archbishopric of Verapoly, with its suffragan diocese of Quilon. Also the three vicariates apostolic of Trichur, Ernakulam and Changanacherry (Thomas Christians).

(vii) The Archbishopric of Agra, with its suffragan Sees of Allahabad and Lahore, and its prefectures apostolic of Bettiah, Cashmere and Rajputana.

(viii) The Archbishopric of Ceylon (Colombo), with its suffragan Sees of Jaffna, Kandy, Galle, and Trincomalee.

With these may be mentioned the territory of Burma, founded as one vicariate in 1722, divided into two in 1870, and into three in 1886.

(6) The Jurisdiction-Settlement.

According to its normal regime, the Catholic Church is divided into dioceses with clear territorial limits, all residents of which are ruled by the bishop of that diocese. The reunion, however, at various times, of portions of the separated eastern churches gave rise to special arrangements in certain places. Thus, communities of United Greeks, Armenians or Copts residing side by side with Catholics of the Latin rite sometimes have a bishop of their own rite, who holds, not a territorial, but a personal jurisdiction over the individuals of that community. This arrangement is popularly known as a "double jurisdiction." In other cases, moreover, and for various reasons, there may be, within the general limits of a given diocese, certain "exempted" churches attached to another diocese from which they are geographically separated; and this is also popularly called a "double jurisdiction," but in another sense of the term.

The condition of affairs inaugurated in India in 1886 includes certain instances of two-fold jurisdiction of both the kinds just described. The first case is that of Bombay Island; the second applies to certain single churches connected with the Goa, Damaun, Bombay and Mylapore dioceses. A few details will be necessary to make the situation clear:—

(*a*) *Bombay Island.*—According to the Concordat of 1886, the province of Goa comprises the four dioceses of Goa, Cochin, Damaun and San Thomé (Mylapore). These were made to include what had formerly been the principal centres of Portuguese influence. The Archdiocese of Goa comprises a tract of coast lying north and south of Goa, with the addition of the Ghaut and Canara districts; that of Cochin covers two separate portions of the Southern Travancore coast; that of Mylapore certain portions of the eastern sea border; while the diocese of Damaun includes the coast strip below the Ghauts, stretching as far north as the river Nerbudda, and southwards along the mainland, past Bombay, as far as the river Savetri—being thus contiguous to the Archdiocese of Goa. Salsette Island, immediately north of Bombay Island, was also included, but Bombay Island itself was reserved for the Archbishopric of Bombay. Hence the curious fact that except for Bombay Island, the whole of the archdiocese of Bombay lies far away to the north, commencing from the Nerbudda river and stretching across Sind as far as

Quetta; while Bombay Island, the centre of the See, is surrounded on all sides by a different diocese which belongs to the padroado judisdiction.

Thus far the limits of the two dioceses were defined territorially, so as to stand quite distinct. But in Bombay the situation was peculiar. Besides the native Christians indigenous to the island, there existed a much larger community of immigrants from Goa, who had come thither at various times and were continually flocking in. Broadly speaking, the indigenous Christians (known as Bombay East Indians) who were already under propaganda, naturally fell under the territorial jurisdiction of the Archbishop of Bombay; while the Goan residents in Bombay—future newcomers from the padroado districts being included—were placed under the personal jurisdiction of the Bishop of Damaun, and a certain number of churches in the island were assigned to their use. The subjects of the two groups are allowed to attend each others' churches and to receive the sacraments of Penance and the Eucharist promiscuously in them; but marriages, extreme unction and burials are reserved by strict right to the two sets of clergy, each for their own subjects. Out of a total Catholic population of nearly 35,000 in Bombay Island, about 8,000 belong territorially to the Archbishop of Bombay, while about 27,000 are under the personal jurisdiction of the Bishop of Damaun.

(*b*) *Outside Bombay Island.*—In various other parts of India there also exists a "double jurisdiction," but in a different sense. While determining the general limits of the different dioceses in 1886, it was found that certain churches within the projected padroado limits were firmly in possession of propaganda, while certain churches in the projected propaganda districts were strongly attached to the padroado jurisdiction. Hence it was agreed to assign these isolated communities to the jurisdiction of their preference. These cases fall into three groups:—(1) In the island of Salsette, which territorially belongs to Damaun, the Archbishop of Bombay holds the allegiance of five churches, of which St. Peter's, Bandra, is the chief. (2) In the diocese of Poona, which is under a propaganda bishop, one church in Poona itself is under the jurisdiction of Goa. (3) In the diocese of Madras there are five churches; in the diocese of Trichinopoly 14; in the Archdiocese of Calcutta, 3; and in the diocese of Dacca 6 churches, all of which belong to the diocese of Mylapore. The jurisdiction over the congregations of these churches is personal, with certain special arrangements as to newcomers. These exempted churches have aptly been described as so many islands, and their congregations as so many colonies, belonging to the diocese from which they are geographically separated.

Besides these cases of double jurisdiction, it may be mentioned that in Travancore the Latin and the Syrian Catholics are under different prelates; and this has been arranged partly by territorial and partly by personal jurisdiction. The diocese of Pondicherry, too, comprises, *extra limites*, certain separated districts, such as Karikal in Tanjore, Mahé on the Malabar coast, Chandernagore near Calcutta, etc. But these are all isolated French possessions, and the jurisdiction is strictly territorial.

Right Rev. LEO. MEURIN, S.J.
The last Vicar Apostolic of Bombay, 1867—1887.

(7) POPULATION, DISTRIBUTION, ETC.

The limits of the various dioceses coincide in some parts with the civil boundaries, but are often determined rather by natural features, such as mountain-ranges, rivers, and even means of railway communication. By inspecting a map published in *The Examiner* (Bombay) of January 19th, 1907, it will be seen that they vary considerably in size—a fact chiefly accounted for by the numbers of the Catholic population. As calculated for the year 1904, this amounts in the aggregate for all India and Ceylon, to about 2,191,362 out of a total population of 286,000,000. Burma, which is not included, reckons its Catholic population at about 65,000. As far as statistics can be procured, the total number of Catholics in British India (not including Burma or Ceylon) in 1857 was 801,858. In 1885 they had risen to 1,030,100; and in 1904 to 1,562,186. In Portuguese territory the figures for 1885 were about 252,477, and in 1906 about 293,655. In French territory they now stand at about 25,859; in Burma 65,127, and in Ceylon, 290,459. It should be added that these figures include only such as are genuine members of the Church—all converts being subjected to careful tests and instruction before admission. These numbers are mostly made up of native Christians, partly of the higher but chiefly of the lower castes; together with a certain

percentage of Europeans belonging to the Army, Government and Civil Service, Railways, etc.; and a number of Eurasians. The Catholic population is most dense among the Thomas Christians of Travancore, where the ecclesiastical divisions are of the smallest. The coast districts east and west, and especially in the south of the peninsula, the scene of the Portuguese and French missions, come next in order of numbers, and here the dioceses are larger. The nearer we approach the north the more scanty the Catholic population becomes; hence the province of Agra, which in dimensions covers almost as much space as the other seven provinces taken together, possesses the smallest number of Catholic inhabitants—this being the field which has only begun to be worked in strictly recent times. This interesting fact will be apparent from the following figures, giving the population of the eight provinces in descending scale :—

(i) Goa, comprising the old missionary districts of Goa, Konkan, Mylapore, Tanjore, Cochin, 562,875.

(ii) Verapoly, mostly Thomas Christians of Travancore, 483,571.

(iii) Bombay, comprising old missionary districts of Bombay, Deccan, Mangalore, Madura, etc., 342,172.

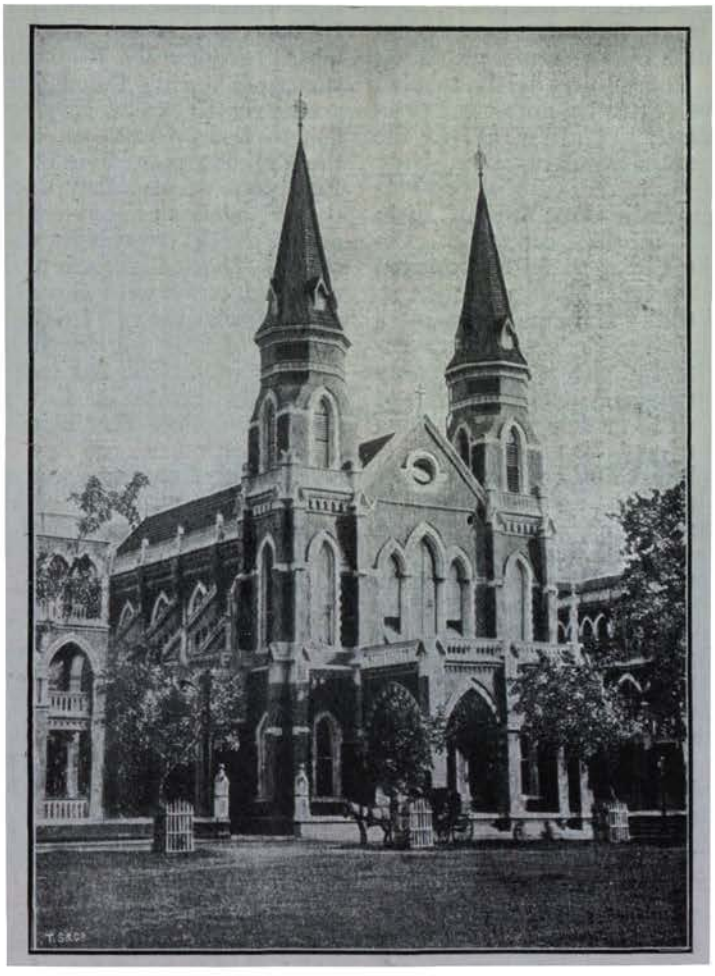
(iv) Pondicherry, comprising old east coast missions with the French missions of the Carnatic, Mysore, etc., 310,891.

(v) Ceylon, largely worked by the Portuguese missionaries, 290,459.

(vi) Madras, a portion of former Portuguese missions; the interior almost unworked by the old missionaries, 85,607.

(vii) Calcutta, only slightly touched by the Portuguese, 85,011.

(viii) Agra, almost altogether untouched by the Portuguese, 31,046.



CHURCH OF THE HOLY NAME, BOMBAY.

(8) MISSIONARY METHODS.

From the above comparison it will appear that the Portuguese certainly succeeded in bringing over vast numbers to the faith. Hence it will be of interest to see how they secured this advantage. Much more has been written in attack than in defence of their methods. The drastic style in which they broke down idol temples and fouled sacred tanks raises a very questionable point, both of ethics and of expediency. While on the one hand it enabled the Christian converts to break more easily with their pagan associations, on the other it created a deepfelt grievance among the unconverted population, which alienated their sympathies, and created a feeling of dislike which some consider to have hastened the fall of the Portuguese regime. Then, again, the reprisals made at various times, on the plea of protecting Christian converts against persecution, contributed to the same result. The Portuguese, however, certainly did not owe their missionary success to the use of physical force. In the Portuguese territories, they attached certain civil advantages to conversion, and certain corresponding disadvantages to non-conversion. They made a great show over the baptism of natives of rank or position, which created a favourable impression on all beholders. The nobility of Goa stood sponsors to the neophytes, even of the lowest rank, and conferred on them their own family names. The missionaries also took advantage of incidental circumstances; as for instance, when certain fishermen of the coast came to plead for protection against the Moslems, and showed a willingness to become Christians in return for such protection. Moreover, the religious orders did so much by means of schools, orphanages and hospitals, as well as commercial and industrial organization, to promote the temporal well-being of those under their charge, that this also may be reckoned an additional inducement to conversion. In districts removed from the direct influence of the State, the methods adopted were exclusively those of example, instruction and persuasion. Only in one or two isolated cases was actual force exercised to make converts. It is often, though wrongly, assumed that the Inquisition was used for this purpose. The Inquisition was founded at Goa in 1560, in answer to a request of St. Francis Xavier himself, whose spirit was far removed from that of coercive evangelisation. It

was in truth a most insignificant concern, having in its beginning only four officials drawing a joint salary of £75 per year. Its work was to take cognizance of alleged cases of heresy, witchcraft and unnatural crimes among Christians, and especially to detect pretending Christians, who were really Jews supposed to be working mischief under that disguise. Its jurisdiction did not properly extend to pagans, except so far as these ell under the criminal laws of the State; and it was, as far as we know, never used to turn a born pagan into a Christian. In any case the accounts of its cruelty and the extent of its executions have been groundlessly exaggerated. (Cf. Fonseca, Sketch of Goa, p. 217, 220.)

In summary, therefore, we conclude that the missionary success of the Portuguese by no means rested on the use of drastic means. It was due partly to civil and social privileges and the protective power and prestige of the Portuguese name; but above all, to the example and zealous influence of a well organized body of missionaries. It ought to be added that in Portuguese times Protestantism was a thing unheard of in India—the first Protestant mission commencing in 1703; and consequently the Christian faith presented to the outsider an undivided front. The presence of so many conflicting forms of Christianity in the country in modern times is, in fact, one of the greatest impediments to evangelising work; and this is true not only from a Catholic but also from a Protestant point of view. The best mission work in modern times is done among the aboriginal tribes and lower classes, who, while far removed from political life, are for the most part free from Brahminic influence, and also from the trammels of the caste system, which elsewhere shows itself an almost insuperable obstacle to progress. The largest new mission stations for natives are in Chota Nagpur (Calcutta diocese); the Godavery districts (Hyderabad); the Telegu districts (Madras); the districts of Trichinopoly, Madura, Pondicherry, Kumbakonam, Mysore, etc., in the south; the Ahmednagar district (Poona); Ghogargaon in the Nizam's territory, and Anand in Gujerat, etc.—that of Chota Nagpur being perhaps the most prosperous and successful modern mission in all India. [125,000 neophytes in the Archdiocese of Calcutta alone.]

(9) Nationality of the Clergy.

Another interesting feature of the Catholic Church in India is the nationality of its clergy. Out of a total of 2,653 bishops and priests, 1,700 are indigenous to the country, and the rest (953) are Europeans. Of these European missionaries, a small percentage are of Irish, and a still smaller percentage of English descent. The rest are members of various religious orders from Italy, Spain, France, Holland, Belgium, and Germany; while the prelates in every case except one, belong to these continental nationalities. The explanation of this fact is to be found in history. Not only was the work of evangelisation under the earlier regime of the padroado done entirely under the *placet* of the Portuguese, but the missionaries of the new regime of propaganda were also drawn almost exclusively from the continent. The reason is a simple one. At the time when the British power began to be felt in India, the Catholics in England were an insignificant body, struggling under severe legal disabilities. Later on, in the nineteenth century, when the Catholic Emancipation Bill was passed and a revival took place, they were barely able to provide for their own spiritual wants, and in no position to look after the evangelisation of other countries. Even at the present day the supply of clergy in England falls far short of the demand; and such will be the case for a long time to come. Hence the necessity of drawing on other countries for missionary supplies, if India is to be missionised at all.

The demand for the English language in the case of these continental missionaries is, on the whole, fairly met. In the cities, where English is in extensive use, they labour assiduously to acquire it—generally with such success that only the slightest indication of a foreign accent remains; and they are competent to teach English to their pupils. In the mofussil districts, where the Catholic population is almost entirely native and Europeans scanty, they devote their whole energy to the vernaculars; but even here it is unheard of to come across a missionary who cannot make himself understood. The missionaries seem generally to be on excellent terms with Government and other English officials, who as a rule keenly appreciate their work; and the fact of their continental origin is not found to stand in their way. The few cases of insular prejudice which one comes across in this matter are too insignificant for notice. The chief opposition they meet with comes rather from the side of the Brahmins. It may be added that the extensive co-operation of men of such diverse nationalities in working for one and the same cause, is often put forward as a signal illustration of the unity and catholicity of the Church.

(10) Schools, Colleges, etc.

The Catholic clergy, besides attending to their spiritual ministrations, have thrown themselves heartily into the educational and charitable work of the country, with results which are second to none. According to the best figures we can secure, they possess in India and Ceylon (omitting Burma) the following institutions:—

(*a*) *For the education of the Clergy.*—23 Seminaries containing 697 candidates for the priesthood; to which must be added a number of scholastics and novices of the various religious orders. The most important of these are the Papal Seminary at Kandy in Ceylon, which receives candidates for the native clergy from all parts of India, and counts 92 students; the Jesuit Novitiate and Scholasticate at Shembaganur in the diocese of Trichinopoly; the Jesuit House of Probation at Ranchi (Calcutta diocese); the Jesuit Scholasticate at Kurseong near Darjeeling—besides the Episcopal seminaries, of which the largest are at Goa, Mangalore, Pondicherry, Verapoly and Colombo.

(*b*) *For the education of Boys.*—11 Colleges preparing for University degrees, with a roll of 1,320 students; 65 high schools with 8,257 pupils; 248 middle schools with 23,269 pupils; 2,438 elementary schools with 98,103 pupils; 47 industrial and other schools with 1,331 pupils; 74 boarding schools with 5,917 boarders; and 97 orphanages with 4,854 inmates.

(*c*) *For the education of Girls.*—59 high schools with 2,744 pupils; 244 middle schools with 14,574 pupils; 672 elementary schools with 41,451 pupils; 70 various other schools with 2,521 pupils; 103 boarding schools with 4,790 boarders; and 126 orphanages with 7,084 inmates.

The total number under education amounts to 143,051 boys and 73,164 girls, out of whom 11,938 are orphans.

The schools for boys are in all cases under clerical management, and are taught by professors belonging to the religious orders or congregations, assisted by lay-masters. The girls' schools are for the most part under Sisters of different religious congregations,

(*b*) *High Schools.*—St. Joseph's Boarding School, Darjeeling, under the Belgian Jesuits, about 207 pupils; St. Joseph's Boarding School, Calcutta, under the Christian Brothers, 1,000 pupils; St. Mary's Boarding School, Bombay, about 517 pupils; St. Xavier's, Calcutta; St. Xavier's, Bombay, and the "Clive" High School, Trichinopoly (already mentioned under University colleges); St. Vincent's Day-School, Poona, with about 300 pupils; St. Aloysius' College, Mangalore, under the Italian Jesuits, 615 pupils; St. Joseph's College, Colombo, under the Oblates of Mary Immaculate, 800 pupils; St. Benedict's Institute, Colombo (Ceylon), 1,000 pupils; besides a number of smaller schools, the totals of which have already been given.

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Catholic Archbishop of Madras.

Most Rev. L. M. ZALESKI,
Delegate Apostolic of the East Indies.

of whom they are 3,057 members in India and Ceylon, also assisted by lay-teachers. In many of the schools non-Catholic pupils are freely admitted, and in a few of them these form the overwhelming majority.

Among the most important of these institutions the following must be mentioned:—

(*a*) *University Colleges with High Schools attached.* St. Xavier's College, Calcutta, under the Belgian Jesuits, about 276+494 students; St. Xavier's College, Bombay, under the German Jesuits, about 350+1,400 students; St. Joseph's College, Trichinopoly, under the French Jesuits, about 420+1,400 students. Smaller university colleges with high schools exist at Mylapore, Cuddalore, Mangalore, Bangalore, Nagpur and Agra.

Of these institutions some pay their own way financially assisted by Government grants-in-aid; while the rest are subsidized by diocesan or private contributions. As for the general question of finance, Hunter observes that "the Roman Catholics work in India with slender pecuniary resources, deriving their main support from two great Catholic organizations [in Europe]; the Association for the Propagation of the Faith, and the Society of the Holy Childhood." Among other resources may be added private charities from Europe, incidental donations, and careful investments in property in India. The contributions of the faithful form a proportionately small item in the whole. Hunter continues:—The "Roman Catholic clergy . . in many districts . . . live the frugal and abste-

mious life of the natives, and their influence reaches deep into the social life of the communities among whom they dwell.'' (Indian Empire, p. 239).

(11) Churches, Archæology, etc.

Except for the reputed tomb of St. Thomas at Mylapore, a few early stone monuments and a few inscriptions on copper, ecclesiastical antiquities are wanting previous to Portuguese times. The Portuguese churches, especially of the 16th and 17th centuries, though not pretending to classical perfection, possess a certain splendour of their own. When about the year 1687 Goa began to be deserted in favour of Panjim, the houses fell into decay; but the churches and public buildings still remain, surrounded for the most part by palm groves and jungle The chief of these is the Church of Bon Jesu, containing the shrine of St. Francis Xavier, whose body is still preserved incorrupt. Besides this, the Cathedral of St. Catharine, and the Churches of St. Francis of Assisi, St. Cajetan and St. Monica deserve special mention. Second to Goa comes Bassein, 35 miles north of Bombay, comprising a large collection of ruined churches enclosed within a line of fortifications. Other groups of ruins are found at Chaul on the coast south of Bombay. The cathedral at Mylapore, containing the reputed grave of St. Thomas, as well as the Great Mount and the Little Mount, traditional scenes of the sojourn and death of the apostle, are also of remarkable interest. Elsewhere, spread over the districts of Portuguese missionary enterprise many old churches, but mostly of secondary importance, are to be seen. Numerous stone crosses of a peculiar type were also erected by the roadsides and the shore, and on the summits of hills, even in places where little trace of Christianity now remains. Among more modern buildings of note may be mentioned the Cathedrals of Allahabad and Colombo, the college churches at Mangalore and Trichinopoly, the parish churches of Karachi and of the Holy Name, Bombay, as among the best. The college buildings of Trichinopoly, Calcutta, Darjeeling and Bombay are also worthy of notice.

Bandel Church. Founded in 1599.

(12) Literary Enterprise.

On the whole, the Catholic clergy of India do not make such full use of the press for propaganda purposes as is the case with Protestants. They have no world-wide organizations like those of the Bible Society, the Religious Tract Society, the Society for the Propagation of Christian Knowledge, etc., nor do they publish newspapers expressly appealing to the wider public of native Indian readers, or adopt any system of tract circulation. This fact is accounted for first by their limited pecuniary resources, and secondly by their arduous pre-occupations in the work of teaching and of the ministry. Hence they prefer to concentrate themselves on a more domestic field of literary work. They have a large number of presses in various parts of the country—Calcutta, Bombay, Madras, Trichinopoly, Mangalore, Colombo, etc., which are devoted partly to the printing of Catholic newspapers, partly to the production of school books, catechisms, and works of instruction and devotion for their flocks. The Catholic community is served by a considerable number of papers, *e.g.*, *The Catholic Herald of India* (Calcutta), formerly called *The Indo-European Correspondence*, and founded in 1865; *The Examiner* (Bombay), formerly known as the *Bombay Catholic Examiner*, and started in 1849; *The Catholic Watchman* (Madras), inaugurated in 1887; *The Ceylon Catholic Messenger* (Colombo); *The Jaffna Guardian*, etc., besides other publications in English and the local vernaculars. All these belong to the propaganda jurisdiction. The padroado is represented in Goa by a number of papers, among which *O Crente* ranks as official; in Bombay by the *Anglo-Lusitano*; in Mylapore by the *Catholic Register*, founded in 1890, etc. These newspapers, besides local and general Catholic news, devote themselves in various degrees to controversial and expositive matter, chiefly for the instruction of the faithful, but also for the benefit of outsiders. To these is to be added a fair amount of pamphlet literature, some of it reprinted from the above-named journals. For the use of the clergy, a monthly organ called the *Promptuarium Canonico-liturgicum* is published in Latin by the Carmelite Fathers of Ernakulam.

(13) Literature of the Subject.

From the Catholic point of view nothing in the way of a complete general history of the Church in India has yet been written, though the materials for such a work are abundant and might easily be collected. They consist chiefly of the records and histories of the differ-

ent religious Orders, collections of official documents, monographs on particular missions, and biographies of eminent missionaries—as well as occasional literature of various kinds. Some rather scanty general histories have been written by Protestants; but most of them are vitiated by a marked animus against Roman Catholicism, and have to be read with caution. The following is a somewhat promiscuous list of works, most of which are easily accessible :—

On the Thomas Christians:—
Mackenzie, Christianity in Travancore, 1901.
Medlycott, India and the Apostle St. Thomas, 1905.
Raulin, Historia Ecclesiæ Malabaricæ.
Geddes, The Church of Malabar and the Synod of Diamper, 1694.
Philipos, the Syrian Church in India, 1892.
Kennet, St. Thomas the Apostle of Malabar, 1869.
Milne Rae, Syrian Church in India, 1892.
Howard, Christians of St. Thomas, 1864.

Concerning the Portuguese:—
Lafitau, Decouvertes et Conquetes des Portugnais, 1533.
O Chronista de Tissuary.
Fariay Souza, Asia Portuguesa, 1666.
Du Barros, Deccadas, 1777.
Dellon, Relacion de l' Inquisition de Goa.
Bullarium Patronatus Portugalliæ Regum, 1868.
Fonseca, Sketch of the City of Goa, 1878.
Torrie, Estatistica de India Portuguesa, 1879.
DeSouza, Oriente Conquistada, 1881.
D'Orsey, Portuguese Discoveries, Dependencies and Missions, 1893.
Danvers, The Portuguese in India, 1804.
O Oriente Porfuguez.
Gouvea, Jornada de Arcebispo de Goa, 1609.

On the Jurisdiction-Struggle:—
Life of Hartmann, 1868.
Strickland, the Goa Schism, 1853.
A copious pamphlet literature dating from 1858 to 1893, all out of print.

Monographs and Biographies:—
Lettres Edifiantes et Curieus es par M, 1780.
Bertrand, Memoires Historiques sur les Missions, 1847; La Mission du Madure, 1854; Letters Edifiantes et Cureuses, Madura, 1865.
Saint Cyr, La Mission du Madure, 1859.
Guchen, Cinquante Ans au Madure, 1887.
Moore, History of the Mangalore Mission.
Suau, L'Inde Tamoule, 1901.
Litteræ Annuæ Soc. Jesu, 1573 seq.
Rerum a Soc. Jesu in Oriente gestarum Volumen, 1574.
Carrez, Atlas Geographicus, S. J., 1900.
Goldie, First Christian Mission to the Great Mogul, 1897.
La Mission de Vizagapatam, 1890.
Tenant, Christianity in Ceylon.
Fortunat, Au Pays des Rajas (Rajputana), 1906.
Coleridge, Life and Letters of St. Francis Xavier, 1988.
Cros, Vie de St. Fran Cois Xavier, 1898.
Monumenta Xaveriana, Madrid, 1900.
Anthony, Mary, Life of Dr. A. Hartmann, 1868.
Suau, Mgr. Alexis Canoz, 1891.
Zaleski, Les Martyrs de l'Inde, 1900.

General and Sundry:—
Maffaei; Historiarum Indicarum Libri, 1593.
De Houdt, Histoire General des Voyages, 1753.
Croze, Christianisme de l' Indes, 1758.
Tieffentaller-Benouilli, Description de l' Inde, 1786.
Paulinusa S. Bartholmæo. India Orientalis Christiana, 1794.
Murray, Discoveries and Travels in Asia, 1820.
Hough, Christianity in India, 1839.
Mullbauer, Geschichete der Kath. Missionen in Ostindien, 1852.
Marshall, Christian Missions, 1862.
Werner, Atlas des Missions Catholiques, 1886; also Orbis Terrarum Catholicus, 1890.
Smith, the Conversions of India, 1893.
Strickland, The Jesuits in India, 1852; Catholic Missions in S. India, 1865.
Fanthome, Reminiscences of Agra.
A Series of Travellers' Accounts from Marco Polo downwards.
The Bombay Gazetteer, the Madras and other District Manuals *passim*.
Hunter, India Empire; and *passim* in the Imperial Gazetteer.
Madras Catholic Directory each year from 1851 to 1907.
Buchanan, Christian Researches in Asia, 1811.
Da Cunha, Chaul and Bassein, 1876.
Steward, History of Bengal, 1813.
Calcuita Review, Vol. V., p. 242 (Portuguese in North India); also April 1881 (the Inquisition).
East and West, December 1905 (Vindication of de Nobili).
Edwardes, The Rise of Bombay, 1902.
[A large bibliography will be found in D'Orsey Portuguese Discoveries, etc., p. 379 seq).

Right Rev. Dr. FABIAN ANTHONY EESTERMANS, O.C.
Catholic Bishop of Lahore.

THE CATHOLIC DIOCESE OF LAHORE.

THE Punjab Mission, as a separate entity, was called into existence in 1880, when Bishop Paul Tosi was appointed Vicar Apostolic of the Punjab. Previous to that year the Punjab was part of the Vicariate Apostolic of Hindustan and Tibet. In 1886, however, the Ecclesiastical Hierarchy was established in India, and the Punjab was constituted a Diocese with headquarters at Lahore. Before the annexation of the Punjab by the British, scarcely any efforts seem to have been made in modern times to implant Christianity in these parts. History records that during the reign of Akbar, a mission of Jesuits from Goa visited Akbar's Court at Lahore, and that they were favourably received; that his successor, Jehangir, allowed some Portuguese Jesuits to establish a mission and build a church at Lahore, and assigned stipends for the maintenance of the priests. But this liberality ceased at his death. Shah Jehan, a more strict Musalman, withdrew the pensions and had the church pulled down, but some traces of it still remained when Lahore was visited in 1665 by the French traveller Thévénot. From the death of Jehangir to the adven

of the British, the history of Christianity in the Punjab is a blank. With the annexation in 1849, missionary enterprise became again possible, but owing to the dearth of priests and lack of material resources, little could be attempted besides ministering to the British troops. But in 1889 the Punjab Mission was entrusted by Rome to the Belgian Province of the Franciscan Capuchin Order, whose duty it is to finance the Mission, to maintain educational and charitable institutions, and to provide missionaries in sufficient numbers to cope with the work. From that year the condition of the Mission has been one of steady progress. Whereas there were only three schools in 1889, there are now twenty schools, five of which are High Schools, and two Industrial Schools. There are five orphanages and a home for abandoned children. The Mission maintains five dispensaries, where free treatment and medicines are given to the natives of all castes and creeds. French Franciscan Sisters have charge of the Government Female Lunatic Asylum at Lahore, and how highly their services are valued may be gathered from the following remark which Sir Charles Rivaz, when Lieutenant-Governor of the Punjab, wrote in the Visitors' Book on the occasion of his visit to the Asylum: "The Female Asylum is generally a pleasing contrast to the Male Asylum, partly because there is sufficient accommodation, but mainly because it has the good fortune to be under the management of four Roman Catholic Sisters, who live in the Asylum and give up their whole time to it. The moral influence which these ladies have evidently acquired over the patients by their cheerful demeanour, and kindly and patient treatment of them, is very remarkable; and the excellent work they are doing under what are necessarily very trying conditions cannot be overestimated."

The present incumbent of the See of Lahore is the Right Rev. Dr. Fabian Anthony Eestermans, O.C. Born at Meerle (Belgium) in 1858, he studied the ancient classics—Greek, and Latin, and Literature at the College of Hoogstraeten, and Philosophy at the lesser Seminary of Mechlin. He was admitted to the Capuchin Order in 1878, and ordained priest in 1883. After completing his ecclesiastical studies, he was appointed Professor of Ancient Classics at the Capuchin College of Bruges in 1885, in which post he remained till 1889, when he volunteered for mission work in India. Shortly after his arrival in the Punjab he was appointed Vicar of the Cathedral, and only resigned this charge on his elevation to the Episcopate in April 1905. He received episcopal consecration at Antwerp on the 29th June 1905, and took formal possession of the See of Lahore on the 10th December of the same year.

A new Catholic Cathedral is now in course of construction at Lahore, which bids fair to eclipse any ecclesiastical building in India. The total cost is estimated at about four lakhs of rupees.

The

Church of England in India.

THE history of the Church of England in India is that of the English in India. The adventurers of the early East India Companies were churchmen, and though they employed no minister of religion on board their ships until 1607, the Company's commissions for each previous voyage enjoined upon their Captain-General that morning and evening prayer should be said daily with each ship's company, and a copy of the great Bible with the Elizabethan Prayer-book bound up with it, was in charge of the purser of every ship. [*The Church in Madras, Rev. F. Penny, LL.M.*, 1905]. Henry Levett, Chaplain to the 'Lord Pembroke' is the first chaplain known to have been appointed for the Indian voyage. He was paid a fee of fifty pounds, with fifteen pounds for his expenses. From that date onwards for many years chaplains accompanied most of the expeditions. It was not only for services at sea that these clergymen were entertained; for the Company's minutes expressly record, respecting William Leske, who sailed about 1614, with double the emoluments of Levett, that the Court was well satisfied as to his being able to contest and hold argument with the Jesuits who were 'busy at Surat.' A letter to him from the celebrated Sir Thomas Roe is produced in facsimile in Mr. William Foster's *Embassy of Sir Thomas Roe*. Many of these early chaplains, particularly Edward Terry and Patrick Copeland, made efforts towards the evangelization of the heathen. A Bengali boy, brought home by the latter chaplain, was christened on the 22nd of December 1616 at St. Dionis Backchurch, Fenchurch St., in the presence of Privy Councillors, the Corporation of London, and the Court of the East India Company. King James himself selected the baptismal name, which was 'Peter.' A surname, 'Pope,' was also conferred upon him.

In 1658 the Company resolved to maintain a Resident Chaplain in India and addressed the Universities with a view to securing a fit person for this isolated and responsible ministry. The idea of the E. I. C. was not only the spiritual welfare of their own servants, but the benefit of Indian natives also. The letter says that the Company has resolved to endeavour to advance the spreading of the Gospel in India and the settlement of an orthodox, godly minister; such an one as may instruct and teach the people that shall be committed to his charge in building them up in the knowledge of God and faith in Jesus Christ. Two years later it was decided to enlarge the Indian Ecclesiastical Establishment from one individual to four, and in 1668 six chaplains were on the list. The factories to which they were appointed were Surat, Madras, Hooghly ('the Bay'), Bantam, Bombay and Saint Helena. The evangelistic idea, so clearly expressed in the circular to the Universities, was perpetuated in these appointments. The Company's Chaplains were to be "qualified for learning, piety, and aptness to teach." They each received a salary of fifty pounds a year, with a gratuity of the like amount if the local factory councils approved their work. All these chaplains at first, and probably well on into the next century, were expected to conduct the morning and evening worship of the Prayer-book daily in the factories where they resided. In 1685, by Royal order, candidates for Indian Chaplaincies were to obtain the approval of the Bishop of London before appointment. In 1698, the new Company reaffirmed this order and requested also the Archbishop of Canterbury to put forth a prayer for use in its factories. This His Grace did in association with the Bishop of London, and the prayer continued in use during the subsequent century. In this prayer it is sought that "these Indian nations among whom we dwell, beholding our good works may be won over thereby to love our most holy religion." Since 1698, and since the union of the old and new Companies in 1702 to the present time, the Archbishop of Canterbury has been associated with the Bishop of London in the supervision of appointments to the Chaplaincies.

At Surat in 1663, before the arrival of a chaplain, the President had prepared a chapel furnished with bibles in different languages, and had requested the Company to supply a painted and gilded altar piece for its adornment, representing Moses and Aaron with the Tables of the Law, and God's name written above them in triangles in several oriental languages. A chapel is also spoken of as in use at Hooghly in 1679. The Company endeavoured to enforce the ministrations and discipline of religion by repeated ordinances, imposing fines on its servants for unseemly behaviour, and neglect of public worship. In 1688 these regulations were codified under ten heads and sent out to the factories, where they speedily became popularly known as 'the Company's Commandments.' The scandalous disorder of certain of the Indian factories was severely rebuked by Sir John Goldsborough (Calcutta, 1693), the Rev. Benjamin Adams (Calcutta, 1702), the Rev. John Antony Sartorius (Madras, 1729) and by Dean Prideaux in 1694, in his *Account of the English Settlements in the East Indies*. On the other hand, a remarkably favourable report on the conduct of daily divine worship, especially on Sundays and Holy days at Surat, is contained in a letter by Mr. Streynsham Master, dated Bombay, 18th January 1672, which also testifies that at the smaller factories divine service was read twice every Sunday.

Under the new Charter of 1698, which governed the united Company after 1702, not only was a chaplain required to be maintained in every garrison and superior factory in India, but each of these chaplains was required to learn both Portuguese and the local vernacular, in order that he might propagate the Protestant religion among the Company's servants and slaves. In 1696 a hundred copies of the Book of Common Prayer, in Portuguese, had been sent out to Madras 'to the honour of God and the glory of our Church,' and there is evidence that many of the chaplains entered *con amore* into the evangelistic portion of their duties.

Under King William III the two venerable Societies, S. P. C. K. and S. P. G., were incorporated, and among the promoters of each was the Revd. Dr. Evans (afterwards Bishop of Bangor, and then of Meath) who had been the first Chaplain in Bengal. To the former he subscribed annually five pounds with the object of providing 'parochial libraries throughout the plantations.' One of the earliest promoters of the objects of the S. P. C. K. in India was the Rev. Samuel Briercliffe, Chaplain in Bengal, who wrote home so strongly of the need in North India of schools similar to those already kept up by the King of Denmark's missionaries in the South, that the Society elected him, on September 2nd, 1714, one of its corresponding members, and sent out to him, and also to the Chaplain of Fort St. George, a small parochial library. From that time onwards, for more than a century, the S. P. C. K., with the help of the Company's chaplains in each place, continued to support and promote both education and evangelistic work in several stations in India. As early as 1709 a separate Committee of the S. P. C. K. sat in London, to carry out the objects of the Society in a sort of friendly partnership with the Royal Danish Mission in Madras, Cuddalore, Trichinopoly and Tanjore, with the hope of extending its enterprise northwards to Calcutta.

In 1680 the first English Church in India, as distinct from the chapels or oratories set apart for the daily prayers in the factories, was erected in Fort St. George, Madras, and consecrated on the 28th of October, by commission from the Bishop of London, in honour of the Virgin Mary. In 1709, on the 5th of June, the Church of St. Anne at Fort William, Calcutta, was similarly consecrated, and on Christmas Day, 1718, St. Thomas' Church, Bombay, was solemnly dedicated to its sacred purpose, and presumably consecrated by commission from the Bishop of London, who until the creation of the Calcutta Bishopric, remained Diocesan over all the English congregations in India. These three churches were built by public subscription, supplemented by moderate grants and gifts from the Company. Their ministers, church-wardens and sidesmen in each case assumed the powers of corporations, and held property in land and the public funds, and administered schools and other charities, as after various reorganizations they continue to do to this day. St. Anne's, Calcutta, was ruined in the sack of 1756, and on the recovery of the Fort the Portuguese Church was confiscated to English use, until in 1760 a parochial chapel, under the title of St. John's, was opened in old Fort William. This served as the Parish Church of all Bengal until the present fine church of St. John was, by commission from the Archbishop of Canterbury, consecrated on St. John the Baptist's Day, 1787.

The fourth English Church in India was built under the S. P. C. K. Mission in Calcutta, largely at the private cost of the missionary, the Rev. John Zachary Kiernander. This, under the name of 'Beth Tephilla' (the present 'Old Church)' was opened with great public solemnity in 1770. Kiernander had arrived as S. P. C. K. Missionary in Cuddalore in 1740. The church with its school and other buildings, being in law the private property of Kiernander, were in 1778 attached for debt by the Sheriff. Mr. Charles Grant however (then Superintendent in Bengal of all the Company's trade there) paid down 10,000 rupees to release the property, and then assigned it to trustees whose successors still hold it. The church and its parsonage and other property are now in charge of the Church Missionary Society.

As the Company's military and civil establishments increased in the three presidencies, so the three establishments of Chaplains increased, though not by any means at the same rate, until at the present day their numbers amount to 166, distributed as shown in the statistical table appended to this article. Indian Chaplains are now appointed directly by the Crown, and serve at present for 23 years, when they are entitled to pensions of £365 a year. Their salaries rise, by increments, from 480 to 1,000 rupees a month. A Chaplain is Archdeacon, under the Acts of Parliament and the Charters, of each diocese in which chaplains serve, and the rest are distributed among the military garrisons and the larger civil stations. From these as centres they serve, for the purpose of the administration of the sacraments and preaching, a large number of 'out-stations' where smaller European communities reside. In nearly all of these latter there is either a church or some public room licensed or otherwise sanctioned by the Bishop for the use of divine worship, where, when the Visiting Chaplain is not at hand, morning or evening prayer is read every Sunday by a member of the local Church Committee. In a large number of places the Local Governments allow grants of 100 or 150 rupees a month towards the salary of some resident clergyman who undertakes chaplain's duties. These grants are doubled or trebled by the various diocesan 'Additional Clergy,' 'Railway Chaplain,' and 'Seamen's Mission' funds. 'Church of England Soldiers' Institutes' are being provided in all the larger military stations, and are active agencies of good work.

Many educational institutions for Europeans and Eurasians, as well as for Natives, have arisen in India under Church patronage. Among the former are the old Calcutta Free School and similar schools in Madras and Bombay, the European Female Orphan Asylum in Calcutta, Bishop Cotton's Schools in Simla and Bangalore, Bishop Corrie's School in Madras, the Lawrence Military Asylums at Sanawar, Ootacamund and Mount Abu, and a similar Asylum at Murree.

In 1726 'Mayors' Courts' were established by Charter in Calcutta, Madras and Bombay, and upon these, ecclesiastical jurisdiction (chiefly exercised in

matters of probate, intestacies and wardships) as the same was used in the Consistory Court of London, was conferred. By consequence it is held by the Government of India that the ecclesiastical law governing the Church of England in India is that of England in 1726, modified only by such later statutes as expressly, or by necessary implication, apply to India. Thus since Act 5 and 6 William IV, c. 54 (which, until 1907, rendered marriage with a deceased wife's sister absolutely void for persons whose domicile is the United Kingdom) was not made applicable to India, it did not supersede, for persons domiciled in India, the English law existing

St. John's Church, Calcutta.

'in 1726. It follows that for East Indians certain marriages within the prohibited degrees, though illegal and repudiated by the Church, until the passing of the new Act in 1907, were not in fact void, unless so declared by an Ecclesiastical Court.

By the time that the United East India Company's Charter expired in 1813, Parliament was induced (mainly at the instance of the Mr. Charles Grant abovementioned, then a Director of the H. E. I. C. and M. P. for the County of Inverness) to incorporate into the Act of that year (53 Geo. III, c. 155, authorizing the King to grant a new Charter) provisions for the appointment of a Bishop in India and one Archdeacon for each of the three Presidencies, with jurisdiction as might be defined; also for an annual grant for education in India and for greater freedom for missionary enterprise. In 1792 Mr. Grant had advocated the cause of missions and education in his 'Observations on the state of Society among the Asiatic subjects of Great Britain,' which was printed for Parliament in 1813. Dr. Claudius Buchanan, a Bengal Chaplain who retired in 1808, was also a prominent advocate of the appointment of Bishops in India and of the cause of Missions there. (See his 'Memoir on the expediency of an Ecclesiastical Establishment for British India' and his papers about Christianity and Christian Missions in India). The cause of popular education, which the new charter encouraged, had been first urged upon the Indian Government by a letter addressed to the Governor-General in Council on the 20th of June 1788 by the four chaplains then at or near Calcutta—Thomas Blanshard, John Owen, Robartes Carr, and David Brown. Their proposal was that the State should set up schools all over India wherein, together with the English language, the rudiments of Christian faith and morality might be

taught. The memorial was not favourably received, perhaps because it too obviously disclosed its author's leading purpose therein, elsewhere described by Mr. Brown as being 'preparatory to the main business of giving Christian light in this land sitting in heathen darkness;' at any rate the letter remains as a monument of the first of all the schemes for native education on English lines, by the State in India.

In pursuance of the Act, a Charter, or Royal Letters Patent, issued the next year, 1814 (54 Geo. III, May 2) founding the Bishopric of Calcutta, with three Archdeaconries, in subordination to the Archbishop of Canterbury. Very ample visitorial and disciplinary jurisdiction was conferred upon the prelates so appointed, who were all to be, and have ever since continued to be, corporations with perpetual succession, capable of holding property of all descriptions.

By an Act of twenty years later (3 & 4 Wm. IV, c. 85) the Bishopric was permitted to be divided by the separation therefrom of new dioceses corresponding to the presidencies of Madras and Bombay, and at the same time the Bishop of Calcutta was to be invested with Metropolitical jurisdiction over the Indian province, which included Ceylon, under the superintendence of the Primate. Accordingly, by Charters dated 1835 and 1837, the Dioceses of Madras (with Ceylon) and Bombay were constituted, and the Bishop of Calcutta declared Metropolitan Bishop in India. The existing Archdeacons continued under their respective new diocesans, with an additional Archdeacon for Colombo (Ceylon). The three original Bishoprics over the presidencies are termed 'Statutory' as deriving their administrative jurisdiction from statutes of the realm. Of these, the Bishop of Calcutta, in virtue of a Royal Warrant in 1814, is expressly invested with the title of 'Lord Bishop.' All the other Bishops are addressed by the same 'style' in virtue of the courtesy of the Church in all ages. The Acts of Parliament affecting the jurisdiction, status, leave and allowances of the three statutory Bishops with their respective Archdeacons are the following:—

The East India Company Act, 1813 (53 Geo. III, c. 155, §§ 49—54).

The Ordination for Colonies Act, 1819 (59 Geo. III, c. 60, § 1). The Archbishops of Canterbury and York, the Bishop of London or any Bishop by any of them authorized, may ordain deacons and priests for service in the foreign dominions of the Crown, and the fact must be stated on the letters of orders.

Indian Bishops and Courts Act, 1823 (4 Geo. IV, c. 71, §§ 3—6). Pensions may be granted to Bishops and Archdeacons who have served ten years. A residence in Calcutta to be provided for the Bishop there, and the expense of his visitation to be defrayed by the Company. The Bishop may ordain for his Diocese only, the fact being stated on the letters of orders, saving the provisions of the E. I. Co. Act, 1813, and of the King's letters patent issued either in virtue of that Act or of that of the King's lawful prerogative.

The Indian Salaries and Pensions Act, 1825 (6 Geo. IV, c. 85, §§ 5 & 15), providing payment in certain cases of half a year's salary to a Bishop's heirs. Pensions may be granted to Bishops of Calcutta for services of five or seven years.

The Government of India Act, 1833 (3 & 4 Will. IV, c. 85, §§ 89 and 90; 92—94, 96—102; of this Act §§ 91 & 95 were repealed by 43 Vict., c. 3, § 5, and 53 and 54 Vict., c. 33. S. L. R.). Bishoprics may be created for Madras and Bombay. The Bishop of Calcutta to be Metropolitan. Salaries and pensions of the Bishops of Madras and Bombay regulated, their visitation expenses to be met by the Company. The salaries of the three Archdeacons limited to 3,000 sicca rupees a year each; provided that the whole expense incurred in respect of the said three Bishops and three Archdeacons shall not exceed 120,000 sicca rupees a year.

The Indian Bishops Act, 1842 (5 and 6 Vict., c. 119, §§ 1—4). Furlough and furlough allowances to be provided for Indian Bishops, and remuneration for a Bishop acting in place of the Bishop of Calcutta.

The Colonial Bishops Act, 1852 (15 and 16 Vict., c. 52, §§ 1—5). Bishops of Calcutta, Madras and Bombay may ordain in England or Ireland by letters of request from the local diocesan.

The Colonial Bishops Act, 1853 (16 and 17 Vict., c. 49, § 1), concerning letters dimissory.

The Indian Bishops Act, 1871 (34 and 35 Vict., c. 62, § 1) concerning leave rules for the three Bishops. The rules framed under this Act were issued under the Royal Warrants of 4th November 1844 and 11th February 1901.

The Colonial Clergy Act, 1874 (37 and 38 Vict., c. 77, §§ 3—14). Indian Bishops may, by request of the diocesan, exercise episcopal functions not extending to jurisdiction in any other diocese. No one ordained for service abroad to officiate in England without permission from the Archbishop of the province and the diocesan.

The Indian Salaries and Allowances Act, 1880 (43 Vict., c. 3, §§ 1—4). The salaries and allowances of Bishops and Archdeacons of Calcutta, Madras and Bombay may be regulated by the Secretary of State for India in Council, provided that the charges on the Indian revenues be not thereby increased.

The whole of the territories of the East India Company in India up to 1837 are included in the three Statutory dioceses. All other territorial Bishoprics founded since then are over the Indian provinces of later acquisition. Jurisdiction in each of these is derived from the Crown by Letters Patent, and the respective Bishops are Corporations-sole, capable of holding property in perpetual succession. These Bishops have no maintenance from the State, as such, but each draws salary as a Senior Chaplain and is further sustained by the income derived from endowments voluntarily subscribed at the founding of the See. To the See of Lahore and Lucknow are attached, by commission, certain districts under the original jurisdictions of the Bishops of Calcutta and Bombay.

In 1845, Ceylon, with its Archdeaconry, was made into a separate diocese. In 1877 the Bishop of Calcutta was relieved of the jurisdiction which he had come to exercise with the consent of Government over the Punjab and Burmah, by the creation of the Sees of Lahore and Rangoon; the former was founded as a memorial to Bishop Milman; the latter owes its existence largely to the liberality of the Diocese of

Winchester. In 1887, after the annexation, Upper Burma was added by Letters Patent to the diocese of Rangoon.

In 1879 under 'The Jerusalem Act' (5 Vict., c. 6) a Royal license appointed a Bishop in the Native States of Travancore and Cochin. In 1890 an Assistant Bishop to the See of Calcutta was consecrated for the district of Chota Nagpur. In 1893 the Diocese of Lucknow was established. In 1896 an Assistant Bishop was by Royal license permitted to be consecrated for the benefit of the Bishopric of Madras, and thus a Commissarial diocese over the revenue districts of Tinnevelly and Madura has been constituted, after the model of Chota Nagpur. Lastly, in 1902 by the usual Letters Patent, the Diocese of Nagpur was founded. Thus the province of India and Ceylon now consists of nine dioceses (each with its Bishop, Archdeacon and Registrar) and two Commissarial Bishoprics.

The Bishops of the province have met in Synod seven times, *viz.*, in 1877, 1883, 1888, 1893, 1897, 1900 and 1904, and on each occasion promulgated Synodalia regulating general church policy on matters of moment.

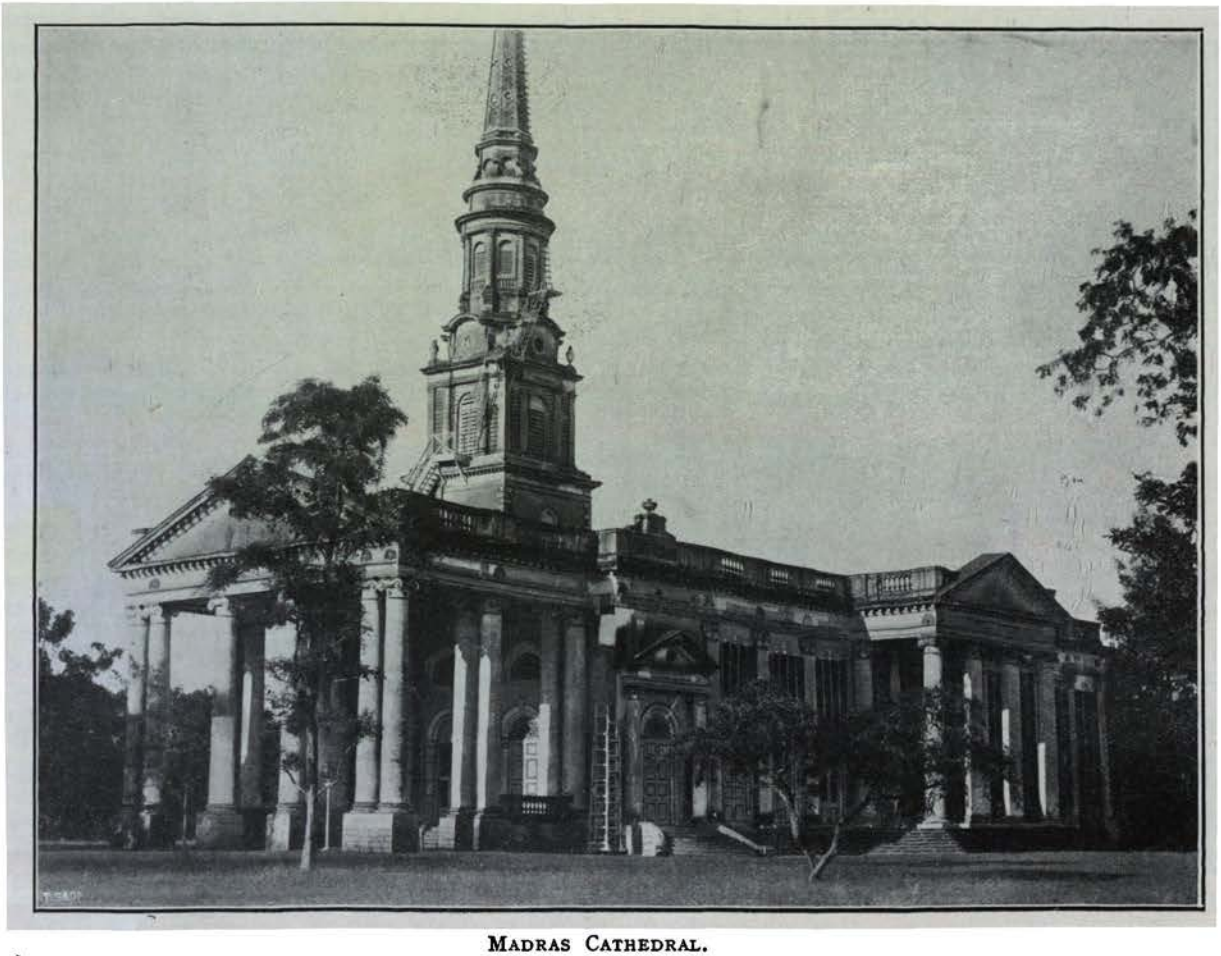
The Cathedral Church of St. Paul, Calcutta, consecrated by Bishop Wilson in 1847, is a splendid and costly building, while those of St. George, Madras, consecrated in 1816, All Saints, Allahabad (Diocese of Lucknow), consecrated in 1887 and 1891, and the Resurrection, Lahore, consecrated in 1887 are also edifices of great size and dignity.

The first English Bishop in India (CALCUTTA) was Thomas Fanshaw Middleton, D.D., Archdeacon of Huntingdon, a noted classical scholar. He arrived in Calcutta in November 1814 and died there on the 8th of July 1822, having travelled over a great part of his vast diocese, confirming, ordaining and encouraging missions. He founded many institutions, among them 'Bishop's College,' near Howrah, since transferred to Calcutta. He was succeeded by Reginald Heber, D.D., Vicar of Hodnet and Prebendary of St. Asaph, who was consecrated in 1823. His episcopal visitation tours are described in his published journals, while his hymns and other poems are celebrated throughout the whole English-speaking world. He died in a swimming bath at Trichinopoly on April 3rd, 1826. The third Bishop was John Thomas James, D.D., Student and Tutor of Christ Church, an accomplished art critic and painter. He reached Calcutta in January 1828; five months later he was taken ill, and on the 22nd of August died on a voyage to China, undertaken in the hope of recovery. His successor was John Mathias Turner, D.D., who arrived in 1829 and died on the 7th July 1831. He did much for promoting European education and for

CATHEDRAL (INTERIOR) BOMBAY.

the extension of missions and the building of churches; he founded the Calcutta District Charitable Society in 1830. The fifth Bishop was Daniel Wilson, D.D., Vicar of Islington, who was consecrated in 1832, in 1835 became Metropolitan, and died on the 2nd of January 1858. He was a strenuous champion of evangelicalism as opposed to tractarianism, vigorous in his preaching and princely in his charities; he built St. Paul's Cathedral. Next followed George Edward Lynch Cotton, D.D., Head Master of Marlborough, consecrated on May 13th, 1858. He succeeded in doing much for Anglo-Indian education especially in the Hill Stations; he greatly promoted missions, and the influence he exerted and the confidence he enjoyed were testified to by Government who officially announced his accidental death (by drowning on October 6th, 1866, while on tour at Kushtia,) as a public calamity. The seventh in the succession was Robert Milman, D.D., Vicar of Great Marlow, consecrated in 1867, who died at Rawal Pindi on March 15th, 1876, when Government publicly recorded its sense of his indefatigable energy, his charity, and zeal in promoting good works, especially those of an educational character. The eighth Bishop was Edward Ralph Johnson, D.D., Archdeacon of Chester. He resigned in 1898. During his rule six new Sees were added to the four of his predecessor's time; he established the provincial Episcopal Synods, and diocesan councils and conferences. The ninth Bishop was James Edward Cowell Welldon, D.D., Head Master of Harrow, who was consecrated in 1898. He resigned in 1902, and Reginald Stephen Copleston, D.D., Bishop of Colombo, was then translated to the Metropolitical See.

The first Bishop of MADRAS was Daniel Corrie, LL.D., Archdeacon of Calcutta, a friend at Cambridge of Charles Simeon and Henry Martyn; he had been an active promoter of missions in Bengal. Bishop Corrie's Grammar School in Madras perpetuates his memory. He was consecrated in 1835 and died on February 5th, 1837. The second Bishop was George Trevor Spencer, D.D., Rector of Leaden Roding, Essex. He was consecrated in 1837 and resigned in 1849. The next Bishop was Thomas Dealtry, D.D., Archdeacon of Calcutta, consecrated in 1849; an active and liberal supporter of missions and missionaries. He died on March 4th, 1861, and was succeeded by Frederick Gell, D.D., Domestic Chaplain to the Bishop of London. His episcopate lasted from 1861 to 1898 when he retired. He died at Coonoor on March 25th, 1902. He was a warm patron of missions, especially



MADRAS CATHEDRAL.

those of the C. M. S. In 1877, Robert Caldwell, D.D., LL.D., was consecrated to assist Bishop Gell in the supervision of the S. P. G. congregations in Tinnevelly, and Edward Sargent, D.D., for a similar charge over those of the C. M. S. For fifty years the former resided at Idaiyangudi and saw the Christians of Tinnevelly increase in numbers from 6,000 to 100,000. He was the author of many historical, ethnographical and linguistic works. He resigned in January 1891 and died at Kodaikanal in the following August. Dr. Sargent was the author of books of divinity and translations into Tamil. He died on the 13th of October 1889. The fifth Bishop of Madras is Henry Whitehead, D.D., late Superior of the Oxford Mission to Calcutta and Principal of Bishop's College, Calcutta. He was consecrated in 1899.

The third Bishopric constituted in India was that of BOMBAY. Of this See the first Bishop was Thomas Carr, D.D., who was consecrated in 1837. He was an earnest adherent of the evangelical school. In 1851 he resigned, and died Rector of Bath in 1859. He was succeeded in the Bishopric by John Harding, D.D., consecrated in 1851. He had been Secretary of the Church Pastoral Aid Society and was an evangelical of a pronounced type. He resigned in 1868. The third Bishop was Henry Alexander Douglas, D.D., Dean of Capetown. He was consecrated in 1868 and died in London on the 13th of December 1875. The fourth was Louis George Mylne, D.D., Tutor of Keble College, Oxford, a high churchman. He resigned in 1896, and was succeeded by James Macarthur, D.D., Vicar of Acton, consecrated in 1898. He resigned in 1903. The sixth Bishop of Bombay is Walter Ruthven Pym, D.D., late Bishop of Mauritius, translated in 1903.

Of the Diocese of Colombo there have been five bishops, James Chapman, D.D., consecrated in 1845, resigned, 1861; Piers Calvely Claughton, Bishop of St. Helena, translated, 1867, resigned, 1870; Hugh Willoughby Jermyn, consecrated 1871, resigned, 1875. He then became Bishop of Brechin and Primus of Scotland. The fourth Bishop was Reginald Stephen Copleston, D.D., the author of *Buddhism: Primitive and Present.* He was translated to the Metropolitical See in 1902, where the following year he consecrated his brother, Ernest Copleston, D.D., as his successor at Colombo.

Thomas Valpy French, D.D., was the first Bishop of LAHORE, consecrated in 1877. He had been first Principal of the now great St. John's College at Agra under the C. M. S. In 1861 he had founded the Derajat Mission. From 1865 to 1869 he had been Vicar of Cheltenham. In 1870, he founded St. John's Divinity School at Lahore under the C. M. S. In 1887, he resigned his Bishopric and devoted the remainder of his life to simple missionary labours; engaged in which he died at Muscat in 1891. The second Bishop of Lahore was Henry James Mathew, D.D., Archdeacon of Lahore. He was consecrated in 1888 and died on the 2nd of December 1898. His successor is George Alfred Lefroy, D.D., late Head of the Cambridge University Mission at Delhi. He was consecrated in his own Cathedral on All Saints' Day in 1899.

The first Bishop of RANGOON was Jonathan Holt Titcomb, D.D. He had been Secretary of the Christian Vernacular Education Society of India. He was consecrated in 1877, and being injured by an accident, resigned in 1882. He was the author of books on Burma and on Buddhism. The second was John Miller Strachan, D.D., and M.D., a Missionary of the S. P. G., consecrated 1882, resigned 1902. His successor is Arthur Mesac Knight, D.D., who was consecrated the next year.

Of the Bishopric in TRAVANCORE AND COCHIN, the first incumbent was John Martindale Speechly, D.D., a Missionary of the C. M. S., who resigned in 1889 after a ten years' episcopate. He was succeeded the following year by Edward Noel Hodges, D.D., also a Missionary of the C. M. S. He resigned in 1904. The third Bishop is Charles Henry Gill, D.D., late Secretary of the C. M. S. for the United Provinces.

The first of the Commissarial Bishoprics to be endowed was that of CHOTA NAGPUR under the See of Calcutta. The first Bishop was Jabez Cornelius Whitley, a Missionary of the S. P. G. in the district. He was consecrated in 1890 and died October 18th, 1904. He was the author of works on the Mundari and other languages. In 1905 Foss Westcott, M.A., of the S. P. G. Mission at Cawnpore, was consecrated second Bishop of Chota Nagpur; he is a son of the late Bishop of Durham.

In 1893, Alfred Clifford, D.D., Secretary of the C. M. S. at Calcutta, was consecrated first Bishop of LUCKNOW (Oudh) with commissarial jurisdiction from the Bishop of Calcutta over a portion of the United Provinces.

The second Commissarial Bishopric is within the jurisdiction of Madras, namely, that of TINNEVELLY AND MADURA. The first Bishop was Samuel Morley, D.D., Domestic Chaplain to the Bishop of Madras. He was consecrated under the provisions of the Act of 26 Henry VIII, c. 14, and Royal license in 1896, and he resigned in 1903, becoming Archdeacon of the English in Egypt. In 1905 his successor, Arthur Acheson Williams, D.D., Archdeacon of Madras, was consecrated.

In 1903, Eyre Chatterton, D.D., F.R.G.S., Head of the Dublin University's Mission to Chota Nagpur, was consecrated first Bishop of NAGPUR in the Central Provinces. He is the author of *The Story of Fifty Years' Mission in Chota Nagpur.*

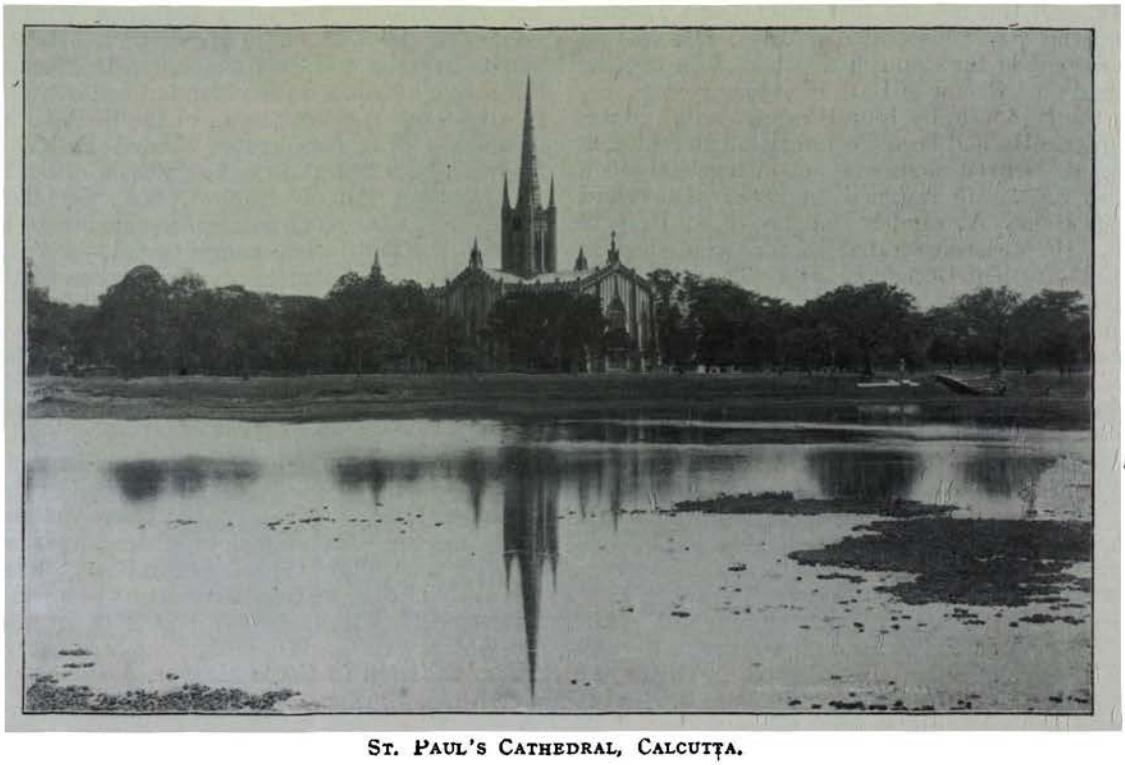
All the Bishops of the province are bound by oath of allegiance to the Metropolitan and the Primate of all England, the Commissary-Bishops taking oath, in addition, to their own diocesans. All priests and deacons, whether maintained by the State or the Missionary and other societies, or employed in education or otherwise, officiate in virtue of license from, after oath of canonical obedience to, their respective diocesans. They also each swear allegiance to the Crown, as do the bishops themselves.

The greater number of the missions of the Church of England in India are supported by the Society for the Propagation of the Gospel, and the Church Missionary Society. Both of these Societies inherit the fruit of the pioneer labours of the Society for Promoting Christian Knowledge.

It has already been pointed out how the Company's chaplains sought the help of the S. P. C. K. to supplement their own necessarily narrowly circumscribed evangelistic efforts. The example of the work of the Royal Danish Missionaries in the South and the repre-

sentations of some of these (especially Bartholomew Ziegenbalg) in England, further quickened the Society's ready interest in India. It was long, however, before any Englishman offered himself to go out to India as a missionary to the heathen. In default of Englishmen, the S. P. C. K. was forced to employ Danish and German Lutherans to superintend its Indian Missions. In 1728 Benjamin Schultze, Head of the Danish Mission at Tranquebar, was taken over by the Society (with the consent of the King of Denmark and under the protection of the E. I. Co.), as its first Missionary in Madras. Thus began the 'Vepery Mission.' He was not well received, however, by the English in Madras, who wrote home that they would prefer to support an English Missionary in English orders. The Society, however, could not find an Englishman and sent out a German, John Antony Sartorius, to assist Schultze. He came out, aided by the active patronage of Queen Caroline and authenticated by a long Latin letter of commendation from Archbishop Wake. One of Sartorius's early letters to the Society contains a lamentable picture of the dissolute lives of both English and Natives in Madras, 'much more abominable than can be imagined in Europe.' Up to 1735, more than 400 persons had been baptized within the Vepery Mission. After the recovery of Madras from the French in 1749, Admiral Boscawen, C.-in-C. of our sea and land forces in the East Indies, made over to the Mission, then presided over by John Philip Fabricius, in compensation for its losses in the late war, a confiscated Roman Church with a garden and some small houses in Vepery. This property is now in the hands partly of Government and partly of the S. P. G., and partly of the Diocesan Committee of the S. P. C. K.

Until the foundation of that Committee under the first Archdeacon of Madras in 1815, the Vepery Mission remained without episcopal control, though under the patronage of the Archbishop of Canterbury; and the Missionaries until 1822 were in Lutheran orders. The most noted of these were Christian Wilhelm Gericke, 1767 to 1803. His personal influence with Government was remarkable. He is reported to have baptized 1,300 persons in Tinnevelly in 1802. He bequeathed 15,000 pagodas to the Mission. Still better known than Gericke is Christian Friedrich Schwartz, popularly known as 'Father Swartz.' He had been taken over from the Danish Mission, and from 1768 to 1778 served as Chaplain to the English troops at Trichinopoly. He then removed to Tanjore. At both stations he built churches. He initiated Government schools and began the mission in Tinnevelly. He became a sort of Prime Minister to the Rajah of Tanjore and was made guardian of his heir, Serfoji. He died at Tanjore February 13th, 1798, having made, it was said, 6,000 converts. Both at Tanjore and at Madras, Government erected monuments to his memory.



ST. PAUL'S CATHEDRAL, CALCUTTA.

The first Englishman to undertake mission work under the S. P. C. K. in India, was Abraham Thomas Clarke, who had served a curé in Lincolnshire. He arrived in Calcutta on the 9th of November 1789, to carry on the Mission founded by Kiernander, of which the property was then, as it is still, administered by a Board of Trustees. His ministry was but short, for on the 24th of November of the

next year Government gazetted him to a chaplaincy, in mistake for another clergyman, and he remained on the establishment for nearly a year. The Calcutta Mission from 1787 for 20 years, save during the brief ministry of Mr. Clarke, was superintended by David Brown, Presidency Chaplain and a trustee of the property.

In 1807, Daniel Corrie, while Chaplain at those stations, commenced evangelistic work at Chunar and Benares. The same year a Corresponding Committee of the Church Missionary Society was formed in Calcutta by the Revd. David Brown, and to this committee afterwards belonged Chaplains Claudius Buchanan, Henry Martyn and Daniel Corrie. The first missionaries of the C. M. S. in Bengal arrived in 1816. In Bombay the Society commenced work in 1804; in Madras in 1814.

In 1808, the Old Mission Church was taken over by Government, and Thomas Trubody Thomason, who in 1820 became the first C. M. S. Secretary for North India, was appointed Chaplain of it.

From 1805 to 1810 the heroic Chaplain Henry Martyn, a Senior Wrangler and the first Smith's Prizeman, who had been Charles Simeon's curate at Cambridge, strenuously exerted himself to evangelize the Hindoos and Mahomedans at Serampore, Dinapore and Cawnpore. He translated the New Testament into Persian and Hindustani. In 1815, Henry Fisher, Chaplain of Meerut, began the mission there.

In 1816, James Hough, author of *The History of Christianity in India, London*, 1839, Chaplain of Palamcotta in Tinnevelly, organized many vernacular and English schools in connexion with the missions of the district, and in 1818 and 1819 he founded at Palamcotta and at Nazareth, seminaries for educating schoolmasters and candidates for the priesthood.

In 1819, Bishop Middleton founded Bishop's College at Calcutta, to be an agency of the Society for Propagating the Gospel in Foreign Parts; and in 1822-23 Bishop Heber established the Calcutta Diocesan Committee of that Society.

On Whitsunday, 1825, the Governor of Bombay, with almost all the great officers of the presidency, united with Bishop Heber in founding a Committee of the S. P. G. for the Archdeaconry of Bombay, and this continues to be the governing body, under the Bishop of the S. P. G. Missions within that diocese.

In 1826, the S. P. C. K. handed over its Indian Missions with most of their property to the S. P. G.

From that date onwards by far the larger part of the Mission work of the English Church in India has been carried on at the expense of, and by the committees of, these two great Societies, S. P. G. and C. M. S., under the supervision of the local bishops. Affiliated to the former are the small missions known as 'The Cambridge University's Mission to Delhi' begun in 1877, 'The Dublin University's Mission to Chota Nagpur' begun in 1891, 'The Community of St. Stephen' or 'The S. P. G. Zenana and Medical Missionary Society' constituted at Delhi in 1887, the Brotherhood at Cawnpore begun in 1889, and the agencies in many dioceses of the 'Committee of Woman's Work.'

Associated with the C. M. S. is the very large organization of the 'Church of England Zenana Missionary Society,' also that of the smaller 'Zenana Bible and Medical Mission.'

In 1872, Bishop Milman of Calcutta invited Father Benson of the Cowley Brotherhood to send some of the members of that Society into his diocese. The following year, accordingly, the saintly Father O'Neill came out. About the same time Bishop Douglas of Bombay profferred a similar welcome and others came out and began the Cowley Fathers' Mission at Bombay and Poona.

In 1880, at the invitation of Dr. Johnson, Bishop of Calcutta, the Oxford Mission to Calcutta or 'Brotherhood of the Epiphany' began its special work in that city.

In 1888, the Mission to the Jews was established in Bombay.

The 'Clewer Sisters,' the 'Wantage Sisters,' the 'Sisters of the Church' and the 'All Saints' Sisterhood' have houses in India under the patronage of the Bishops.

In several parts there are 'Missions to Seamen' established; that at Calcutta was begun in 1852.

In communion with the English Church in India is the small Scottish Episcopal Mission at Chanda.

Although Government as such cannot promote Indian missions, these have at all times enjoyed the support of many of its leading military and civil officers. Thus, in 1758, Lord Clive is believed to have invited the S. P. C. K. Mission to Calcutta; at any rate, he gave its first missionary marked favour and welcome. In 1795 Lord Wellesley sent Dr. Claudius Buchanan to visit the Syrian Church in Malabar, and his published *Christian Researches* giving an account of his visit, led to the establishment of what was at the first meant as a mission of help to the Syrian Church there.

In 1823, the Church Mission at Gorakhpur was begun, at the instance and at the expense of Mr. Robert Merttins Bird, then Judge and afterwards Commissioner of the district; he and his sister both actively participating in the work.

In 1825, the Governor of Bombay, as has been already stated, and his leading officials, helped Bishop Heber to introduce the S. P. G. into the presidency.

In 1838, some of the Company's military and civil officers urged the C. M. S. to take up work among the Telegus of South India, and in 1841 this was accordingly begun, and the mission under the C. M. S. and S. P. G. in all the Telegu districts is meeting with the most striking success.

In 1842, Donald Friell McLeod, a civilian, afterwards C.B., and K.C.S.I., and Lieutenant-Governor of the Punjab, procured the inception of the mission to the Gonds. In 1854 he brought the C. M. S. to Kangra and in 1856 to Multan.

In 1850, a Captain Martin gave 10,000 rupees to start a Church Mission at Lahore. In 1851, Mr. Mosley Smith, District Judge at Jabalpur, began to invite Hindoos to his house to hear the Bible read and explained, and thus with the help of the local Chaplain the Mission was begun there.

In 1854, Captain Taylor gave his bungalow at Ellore to secure a resident Missionary there.

In 1859, Sir Arthur Thomas Cotton and Captain Haig started, among the coolies who were making the anicut

on the Upper Godaveri, the existing mission at Dummagudem.

In 1862, Sir Robert Montgomery, Lieutenant-Governor of the Punjab, and a number of his leading officials gave 14,000 rupees to start the Church Mission in Kashmir. In 1865, Major Herbert Benjamin Edwardes and his officers collected 30,000 rupees to establish the like work in Peshawar. The same year missions at Bannu and at Dera Ismail Khan were begun at the invitation of Colonel Reynall George Taylor, Commissioner of Umballa. In 1880, two British military officers began the mission at Karachi.

In 1892, James Munro, C.B., a retired civilian, who had been Commissioner of Police in London, started and himself superintended the Ranaghat Medical Mission.

These examples might be greatly multiplied.

Of the Anglican Missions in India most remarkable for numbers and for the development of self-support may be mentioned those in the Tinnevelly District under the charge of the S. P. G. and the C. M. S. Those of the former Society have their centre at Nazareth. Three-fifths of the district is served by the C. M. S. and is organized into fifteen 'circles with Mengnanapuram as their common mother town. There are about 90,000 Christians attached to the missions. The Mengnanapuram 'circle' where the celebrated Missionary, John Thomas, who died in 1870, had his head-quarters, is entirely self-supporting and with the assistance of other circles is maintaining a mission at Yellandu in the Nizam's dominions.

The Ahmednagar Missions in the diocese of Bombay under the S. P. G. is another progressive mission as regards numbers. Here, in 1878, the Revd. J. Taylor baptized about 2,000 souls.

The Telegu Missions of the two societies are also examples of remarkable expansion. The S. P. G. superintending about 12,000 baptized pesr ons and the C. M. S. about 20,000. There is believed to be a steady movement towards Christianity amongst the Panchama people of the Telegu districts.

The Chota Nagpur Mission is another instance of remarkable development, numbering about 18,000 native members.

The two great Societies, with their associated Missionary enterprizes, fraternities and sisterhoods, maintain respectively in India the following staffs of agents:—

	English Clergy.	Native Clergy.	English Laymen.	English Women. *
S. P. G., etc.	90	126	4	54
C. M. S., etc.	160	154	35	327

* Not reckoning wives of missionaries.

These with the assistance of many thousands of native schoolmasters, catechists, and readers manage the evangelistic and the equally important pastoral work of the missions, and also a very large number of colleges and schools of every grade, hospitals and orphanages.

The expenditure on all missionary institutions of a pastoral character, such as schools, the native pastorate and the catechists, church building and maintenance, is largely supplied by native contributions. The rural parishes are organized under committees of the inhabitants (panchayats) who usually administer not only the local church funds, but moral discipline also, under the control of larger bodies representing districts presided over by the English Missionary and authorized by the Bishop, to whom they report, for the severer censures of the church, cases of serious scandal. Excommunication is inflicted in the worst cases and is strictly observed by the Christian communities. It is a rule in all English Church missions in India not to admit more catechumens than can be watched and trained during the often protracted probation for baptism, nor to baptize more than can be afterwards dealt with. Continuous pastoral supervision of the rural Christian communities is the very essence of the English missionary system. Thus, even after baptism, a probation, sometimes of years, is required before a convert is admitted by confirmation and communion to the franchise of his parish and a share in the administration of its discipline.

H. B. H.

FOR STATISTICS OF THE ECCLESIASTICAL PROVINCE OF INDIA AND CEYLON—

See next page.

ECCLESIASTICAL PROVINCE OF INDIA AND CEYLON.

STATISTICAL TABLE.

Diocese.	Parishes and Mission districts.	Churches consecrated or licensed.*	Total population of the diocese (approximate).	Church membership (approximate).	Chaplains on H. M. Establishments.	Other English Clergy.	Native-born Clergy.
Calcutta	119	87	9,000,000	74,000†	22	67	32
Chota Nagpur	26	18	5,000,000	18,000	...	11	15
Madras	183	95	44.000,000	83,000‡	35	39	79
Tinnevelly and Madura ...	107	155	4,000,000	91,000	..	14	85
Bombay	77	55	25,000,000	40,000§	25	40	14
Colombo	196	141	3,000,000	30,000	...	31	53
Lahore	37	83	34.000,000	47,000	33‖	66	17
Rangoon	26	31	10,000,000	23,000	12‖	22	15
Travancore and Cochin	41	52	3,000,000	48,000	...	13	31
Lucknow	66	85	47.000,000	69,000	26‖	57	15
Nagpur	23	41	33,000,000	9 000	13‖	13	4
Total ...	901	843	298,000,000	532,000	166	373	360

* Not including small Mission Chapels and Prayer Houses.
† Of which 20,000 are Europeans and Eurasians.
‡ Do. 29,000 do. do.
§ Do. 24,000 do. do.
‖ This number in each case includes the Bishop of the Diocese who for salary, allowances and leave counts as a senior Chaplain.

Note.—The Chaplains of the dioceses of Calcutta, Lahore, Rangoon, Lucknow and Nagpur constitute the 'Bengal Ecclesiastical Establishment.' Those of the dioceses of Madras and Bombay are re-pectively the (English) Ecclesiastical Establishments of the two Presidencies.

The

Scottish Church in India.

THE Scottish Church in India is now represented mainly by the Church of Scotland, and the United Free Church of Scotland. Besides these two large churches there are missions of at least two Scottish minor churches, the Scotch Episcopal Church at Chanda, and the Original Secession Church at Seoni. The labours of Scotsmen are not confined to these churches. Scotsmen find their way into most of the great missionary organizations such as the L.M.S., the Baptist Missionary Society and even the C.M.S. But while they remain thorough Scotsmen to the end of their days, they do not make the Societies to which they belong Scottish. Beyond noting the fact that they exist, this article cannot take cognizance of them. We shall confine ourselves, therefore, to the operations of the Church of Scotland, and the United Free Church of Scotland in India.

CHURCH OF SCOTLAND.

The work of the Church of Scotland in India falls into two sections—that done by chaplains, and that done by missionaries.

CHAPLAINCIES.

The Church of Scotland, as the State Church of Scotland, claims to be entitled to share the privileges of the Church of England in India. There is technically no State Church in India. And yet the Church of England is for all practical purposes the State Church. From an early date the Church of Scotland began to realize its ecclesiastical responsibility for Scotsmen in India belonging to the official and the mercantile classes. The Directors of the East India Company appointed a Scottish chaplain to Calcutta in 1813, and soon thereafter chaplains were sent to Madras and Bombay. An ecclesiastical establishment for the Church of Scotland was set up on the same basis as that of the Church of England. It was naturally a much smaller establishment as the Scottish nation bears to the English nation the ratio of 1 : 8 or 1 : 9.

The original number of three chaplains was doubled in course of time: but the establishment remained at the figure six till 1859. In that year seven chaplains were added, and were distributed thus:—three to Bengal, two to Madras, two to Bombay. Thus there were thirteen chaplains on the civil establishment. In addition there were six military chaplains attached to Scotch regiments. In time these six military chaplains were withdrawn by Government, and their work was thrown upon the civil chaplains. This imposed on the latter almost impossible duties. They were stationed at Calcutta, Madras, Bombay, Allahabad, Meerut, Umballa, Bangalore, Secunderabad, Poona, Kurrachee, and could not also serve regiments unless these happened to be at the civil station of which they were chaplains. Consequently some means had to be devised to overtake this duty. Additional Clergy Societies were formed to provide ministers who, while not on the regular Government establishment, might discharge the duties of chaplains. Private contributions and Government grants enabled the Church of Scotland through its Colonial Committee to undertake work at other centres, *viz.*, Meerut, Rawalpindi, Mhow, and Quetta. In addition to the regular and Colonial Chaplains on the establishment the Senior Chaplain appoints as need arises ministers of Presbyterian and other Protestant churches as Acting Chaplains. American Presbyterians, Wesleyans and Baptists have been appointed in this way. The Church of Scotland has thus been able to discharge its duty not only to the civil stations where it regularly works, but also to the Scottish regiments wherever stationed.

The chaplain has to discharge all the functions of a minister in Scotland, preaching, pastoral visitation, and other ministerial duties; but in addition has to maintain relations with Government and to conduct a large amount of official correspondence. The military chaplain (though technically there is no such office) has to adapt himself to the life of the regiment and to military discipline.

In such a thoroughly Scottish centre as Calcutta, the Senior Chaplain of Bengal ministers to a well-organized civil congregation and discharges all the official duties as head of the establishment. His is no small diocese. The whole of North India from Calcutta to Quetta is under his official control. He has to make arrangements for chaplains, military chaplains, and acting chaplains. All correspondence with Government passes through his hands. The movements of Scottish regiments have to be watched, and chaplains appointed. The Senior Chaplain is practically the Head of a Department.

In Bombay and Madras there are similar Senior Chaplains. Theoretically the Church of Scotland stands on an equality with the Church of England in the eyes of Government. But in practice she needs sometimes to assert her rights. In the time of Bishop Welldon a controversy arose as to the use of Government churches. After much acrimonious correspondence it was decided that churches that were consecrated by Bishops were thereby alienated to the Church of England, and although built by public money, were not available for other denominations except by an act of grace on the part of a

View of St. Andrew's Church from Mission Row, 1826.

chaplain and his bishop. It was thus declared that garrison churches though built out of public funds were not available for the use of Scottish regiments except by grace of the Anglican chaplain and his bishop. This position was felt to be intolerable by the Church of Scotland, which took action in its General Assembly, and by means of representations to the (Home) Government procured the right to have Presbyterian churches built in garrisons out of public funds. In this way the grievance has been removed though the sting of the inequality has not yet been forgotten.

The Senior Chaplain suffers by contrast with an Anglican Bishop, though in the Bengal Establishment his duties are almost episcopal. It has been felt that there should be one Presbyterian official over the whole work of the Church of Scotland in India, to supervise that work, to co-ordinate its needs, and to represent its case to the Government. Such an official seems necessary, as the present Senior Chaplains represent only their own establishments. A general Superintendent for the whole of the church's work in India would probably meet the case. For the title Superintendent there is the venerable precedent of John Knox, but there is no doubt that the title has little charm for modern Presbyterians. The title of General Secretary has also been suggested and may in due course be accepted.

The Ecclesiastical organization of the Church of Scotland in India, Burma and Ceylon is divided into six bodies resembling Presbyteries called Presbyterial Bodies, *viz.*, Calcutta (for Bengal, Assam, and Burma), Madras (for Arkonam, Bangalore, Madras, and Secunderabad), Bombay (for Bombay, Karachi, Poona, Quetta), Northern India (for Allahabad, Cawnpore, Chamba, Daska, Dalhousie, Gujrat, Jalalpur, Jammu, Meerut, Murree, Rawalpindi, Sialkot, Umballa, and Wazirabad), Eastern Himalayas (for Darjeeling, Kurseong, Kalimpong, Independent Sikkim, and the Dooars). The Presbytery of Ceylon supervises work at Colombo, Galle and Kandy.

The Presbyterial Bodies consist of all Chaplains and Acting Chaplains that are ministers of the Church of Scotland, and all ordained missionaries and ministers of that church, two senior ordained native missionaries, and one representative elder from each native Kirk Session whose pastor is a member of the Court, two elders from European Kirk Sessions in the Presidency towns and one from European Kirk Sessions in the Mofussil.

Each Presbyterial Body exercises functions similar to those of a Presbytery at home with power to license and ordain Europeans, East Indians, and Indians for work in India under courses of study sanctioned by the General Assembly.

St. Andrew's Church, Calcutta, was the first church building of the Church of Scotland erected in India. It is the property of Government, but is assigned to the Church of Scotland. It is a handsome structure forming a feature in Dalhousie Square, which is reputed to be the finest square in India. Architecturally it is inferior to the church at Madras, which was built on the plan of an Italian church, and of which the following description has been given:—"No wood is used in the building except for doors and windows, and there is no edifice extant where a dome of masonry of the same dimensions is supported on a colonnade of the same height, the entablature of which is a straight arch without beam or lintel. The church is circular, 81½ feet in diameter with an eastern and western extremity. The eastern end is occupied by the choir and organ; the western forms an entrance as well as side rooms for vestry and office."

Among other churches deserving special notice are the Macfarlane Memorial Church at Kalimpong (a large edifice holding 600 people and forming a landmark in the district that is visible for many miles), and St. Columba's Church at Darjeeling just above the Railway station, meeting the eye of every new arrival in that hill station.

The Church of Scotland congregations throughout India minister not only to Scottish immigrants, but to those members of the domiciled community that are attached to Presbyterianism. In this respect the gratitude of all sections of Presbyterians is due to the Church of Scotland for ministering to Scotsmen and other Presbyterians in civil populations that are preponderatingly Anglican.

Before we pass to the Missions of the Church of Scotland, a brief reference must be made to the churches of Ceylon. Long before the Church of Scotland began work in Ceylon, the Reformed Church of Holland, which is almost Presbyterian, ministered to European settlers. In 1642 there was a congregation at Galle, then a much more important place than now. The Church had three circuits, Colombo, Galle, Jaffna—under one consistory whose jurisdiction while similar to that of a Presbytery also included the functions of a Scottish Kirk Session in matters of discipline. When Ceylon was ceded by the Dutch to the British in 1796, the Dutch church ceased to have much interest in the colony, and 15 out of 16 Dutch ministers left the island.

It was not till 1847 that the Church of Scotland appointed a chaplain to Galle in the person of the Rev. J. K. Clarke who was appointed Colonial Chaplain of Galle. The Colombo Church was founded in 1840 by Scotch officials, merchants, and others. The Ceylon Government paid the salary of a chaplain. The Kandy Church was founded in 1855. The Ceylon churches minister not only to Scottish Presbyterians, but to descendants of the Dutch population.

In 1881 something like disestablishment occurred in Ceylon, and the Government gave notice that when the chaplaincy was vacated they would discontinue the salary of chaplain. The present minister is supported partly by the income from a local endowment and partly by a grant from the Colonial Committee of the Church of Scotland.

The ideal of the Church of Scotland is to follow Scotsmen in India with the ministrations of their church. While it has been wonderfully successful in providing churches and services in various centres, it cannot overtake the scattered Scotsmen that are to be found in every part of the Indian empire, sometimes in groups, sometimes as solitary individuals. There is hardly a church at work in India that does not include in its membership Scotsmen who were born Presbyterians, but whom the changes of life in India have carried beyond the sphere of influence of the Scottish Church. In recent years the establishment of a congregation of the Church of Scotland at Simla has provided an ecclesiastical home for Scotsmen in the summer capital of India.

By co-operation with the United Free Church the spiritual needs of Scotsmen in the mills near Calcutta have been supplied by the appointment of two ministers, one representing each church. Such co-operation will probably be more usual in the future. An English service in connection with each Mission centre where Europeans live would help to cover the ground. Such a service in the Mission Church at Darjeeling has been distinctly helpful to Presbyterian visitors at that health resort.

CHURCH OF SCOTLAND MISSIONS.

These are found at Calcutta, Madras, Darjeeling, Kalimpong, in the Punjab at Gujrat, Sialkot, Chamba, Daska, and (for the work of the Women's Foreign Mission) at Poona.

The first missionary of the Church of Scotland to India (though not the first Scottish missionary) was Alexander Duff, the perfervid orator and preacher, the most courageous apostle of Christ Scotland ever sent forth. He landed in Calcutta in May 1830 after being twice shipwrecked on the way. His instructions were to study missions in Calcutta but not to dream of settling down there. The study of mission operations then being carried on in the city led him to the resolve that Calcutta needed a new kind of Christian effort that would bring Christianity into the circles of the middle class who were more or less educated. Duff united the propagation of Christianity with the imparting of sound English education. His method has been followed all over India by one Church and Society after another, although there have always been severe critics of this combination of Christianity with education. Curiously enough, the same virulent criticism has never been directed against the combination of preaching and medical work, though the two forms of Mission work are very similar.

Duff did not get much help from other missionaries in Calcutta but went on with his programme. And whatever surface objections may be made to Educational missions, this much is to be said for them, that they are the only form of mission-work in India that familiarises the mind of the educated middle-classes with the knowledge of Christianity. It may be argued that so difficult a class is not worth the trouble of evangelising. But this argument ignores the social value of the class concerned, in whom many of the hopes of India are centred. To omit educational missions from the programme of Christianity would practically mean the exclusion of the middle classes from the propaganda.

Duff saw that in his day, and he had the courage to defy his instructions, and the lugubrious dissuasions of the older missionaries in Calcutta. He remained in the city, which promptly recognised him as her most eloquent spokesman, and he brought rapidly to a successful issue his combination of education and evangelism.

He had some difficulty in finding suitable premises. He began work in rooms lent him by the famous leader of the Brahmo-Somaj, Rajah Ram Mohun Roy. From the beginning Duff made religious teaching the distinctive feature of his school, and baptisms soon followed. Duff's second convert was Dr. Krishna Mohun Banerjee, the most scholarly of all the converts of Bengal. Each baptism was the signal for a vehement attack on Duff's methods, and for a temporary boycott of his school. But he held on as if nothing had happened and his school became the model for the city. In 1837 was laid the foundation stone of the General Assembly's Institution in Cornwallis Square. At this time Duff was in Scotland. Driven home by dysentery, he had been detained to plead the cause of missions, and his wonderful eloquence kindled missionary fervour in the undivided Church of Scotland. When he returned in 1840 he found the work in the hands of Mackay, Ewart, Macdonald and Thomas Smith prospering steadily. There were about 900 pupils at this time and their number was constantly growing. Then came the Disruption of the Church of Scotland in 1843, and the pathetic relinquishment by Duff and his colleagues of the Institution reared by his labours and his eloquence. After the disruption it was closed for some time. It was soon filled after the re-opening in 1845, and is now the largest missionary educational institution in North India. It was built up into a great College under Dr. Ogilvie, and subsequently under Dr. Hastie and others. It occupies an excellent site in the Northern division of Calcutta. In 1908 the two institutions founded by Dr. Duff (the General Assembly's Institution and the Duff College) are to unite. The College will meet in the Cornwallis Square premises with a new Science block. The School classes are to occupy a new handsome building in the same locality. The name is to be Calcutta Christian College, and it is safe to say that a very strong college will result from the union of the two institutions.

The woman's work is carried on at Bowbazar, Calcutta. Hindu girls' schools, a boarding school for Christian girls, and zenana mission work are the activities of this branch of the Mission, which contemplates acquiring new and more suitable premises at the north end of the city.

At Muttiabruz, Budge-Budge and Ghoosery small outstations are maintained, superintended by a missionary resident in Calcutta.

At Madras there is a second grade College (teaching up to the Intermediate Examination). It was begun in 1837. It has one European professor usually. The Woman's Mission has school and Zenana work. About 40 miles from Madras is Arkonum, where mission work is carried on under a European missionary. Educational and evangelistic work are steadily maintained.

The Mission at Poona has a hospital for women which attracts patients from far and near. The boarding school for Christian girls and the Zenana Mission work are adapted to the needs of the communities served.

In these cities successful work has been accomplished, and steadily maintained, but it is in rural districts that most of the success of the Church's missions has been reaped. The mission in the Darjeeling district has been not only a religious force, but a social elevator of the community. KALIMPONG has its Training School for Catechists, its Hospital, its Weaving School, its Lace School, its home industries as well as its large and well-filled church. From it as centre there have sprung up numerous village churches, built largely

by the people themselves where on week days school is held and on Sundays the gospel is preached. Although under an undenominational Committee, the St. Andrew's Colonial Homes at Kalimpong for the boys and girls of the domiciled European community in India are closely associated with the Church of Scotland Mission. The Superintendent of the Homes is the Rev. Dr. J. A. Graham, the head of the Mission at Kalimpong, and in many other ways the influence of the Mission on the homes is felt. The workers from Europe in both Mission and Homes now number over 30. Down in the fever-stricken Dooars (not far from Kalimpong as the crow flies) a Scotsman ministers to planters, and mission work is carried on among coolies on tea-gardens. The influence of Kalimpong is felt far and near as a centre not only of religious and educational enlightenment, but of industrial progress. New industries are being taught, the resources of the locality are being utilised. One scheme leads to another, and all are successful. To such courageous initiative both Government aid and voluntary local donations are freely accorded. Perhaps nowhere in India do mission enterprise and Government aid supplement each other more naturally. The medical grant for the district is not expended in Government dispensaries but is handed over to the Mission which undertakes all cases in the district. Kalimpong is an almost ideal centre for mission work. At an elevation of over 4,000 feet it is yet not too cold for a large population. In summer it is warm, in winter not too cold for comfort. The soil is fertile and let out in crofts by Government (the owner). Indigenous methods of cultivation abound, and a happy peasantry lead contented lives.

The history of the Mission is remarkable. It began as an outstation of Darjeeling in 1875 and was worked by a native catechist. In 1880 a European missionary was appointed and did the pioneer work of the Mission so wisely that although the Mission has far outgrown the original plans, it has done so by evolution and not by revolution. Boundaries have been extended, new departments have been opened, but the piety and commonsense of the first missionary have not been set aside. Kalimpong may be described as one of the most successful missions in India both in respect of its achievements and its promise.

Darjeeling.

Mission work was begun at Darjeeling in 1870 by the Rev. W. Macfarlane, appointed to the mission at Gaya in 1865. When that mission was abandoned in 1870, Mr. Macfarlane chose the Darjeeling district as his future sphere. At Gaya he became interested in a group of hill lads who had been sent there for education. Following them up to their native hills, the Church of Scotland, at the invitation of European settlers in the Darjeeling district, began work. At first progress was slow: but gradually outstations were formed in little villages on the hills, and now Darjeeling and Kalimpong and the village churches throughout the district have a Christian community of over 5,000. About 1880 Mr. Macfarlane took up work at Kalimpong, and in 1887 he died there having begun to reap the results of his pioneering efforts.

At first the Mission house at Darjeeling was situated considerably below the station, but about the year 1890 the Mission procured a commanding site in Darjeeling itself. A handsome church was built and recently a new school house has been added.

Women's work is carried on in the same compound. The Darjeeling Mission has many primary schools on tea-gardens in the district, and though its activities are by the nature of things less numerous than those of Kalimpong, its influence is very great. In recent years Kurseong has been erected into a separate centre, and now with its resident missionary and its new church it superintends village work down to the Dooars.

Passing from Darjeeling across North India we come to Sialkot, Daska, Gujrat, and the Native State of Chamba.

The Sialkot Mission was founded in 1857, shortly before the mutiny, by Mr. Hunter who had come up to the Punjab from Bombay. He was murdered in the mutiny troubles, but the Mission thus begun in tragedy was continued. From it, in time, work was carried to Wazirabad and Gujrat. At Wazirabad there has been a notable accession of low caste people to the Christian ranks. Gujrat which at first was a difficult field has yielded to a large extent to the steady Christian siege carried on by the Mission through medical work and preaching and teaching. Agencies have been multiplied and much activity is shown in the various branches of work in operation among women as well as men. The Medical Missionaries of Gujrat of both sexes have made the Mission popular in the whole district. Here as elsewhere the entirely beneficent work of dispensary and hospital has removed the antagonism and prejudice that often exist in simple minds to the preaching of a gospel deemed alien. The Women's hospital is a distinct feature of the Gujrat Mission. Daska was at first managed from Sialkot, but events justified making it into a separate centre. In addition to the usual equipment of a Mission. Daska has a Training School for catechists and evangelists.

The Native State of Chamba is friendly to the Mission work which was begun in 1863, but was not formally made over to the Church of Scotland till ten years later. Medical work here also gained the confidence of the people. The benefits conferred upon the people were frankly recognized by the Rajah of Chamba who gave to the Mission the Church, both site and building. The foundation stone was laid in February 1899. This gift is, if not unique, at least very exceptional. A Hindu Rajah, proud descendant of a long line of rulers whose family traditions extend over one thousand years, must be not only magnanimous personally, but fully persuaded of the benefits conferred by the Mission on the sick and ignorant before he can venture on the gift of a church to the Mission. The significance of this act can hardly be overestimated.

In 1894 the baptisms in the various stations of the Church of Scotland's mission in the Punjab totalled 607. Since that date numbers have increased.

After bitter opposition the Church of Scotland obtained a footing in Jammu in 1889. But it was not till 1902 that the Maharajah of Jammu gave formal permission to the mission to settle there. A site was granted for a European missionary's house, and organized work is steadily maintained.

United Free Church of Scotland.

This church was formed in 1900 by the Union of the Free Church (founded in 1843 by the Disruption) with the United Presbyterian Church, formed in 1847 by the Union of the Secession and Relief Churches. In 1900 a small body of Free Church members and adherents refused to enter the Union, went to law to claim the property of the Free Church, and after losing their case in two divisions of the Court of Session in Scotland, won it in the Appeal Court of the House of Lords. But the people of Scotland would not tolerate an arrangement that was so obviously unjust, however legal, and an Act of Parliament was passed incorporating a Commission to divide the property of the Free Church equitably between the United Free Church and the legal Free Church. The Commission in 1906 handed over all Mission properties and specially destined funds held by the Free Church before 1900 to the United Free Church. Consequently the latter church may be considered the real successor of the Free Church in the Mission field and the possessor not only of its buildings but of its history.

As a matter of fact the Union of the two churches in 1900 did not affect the Indian mission except to increase it. The spheres of occupation were different. The Free Church held Calcutta, Madras, Bombay, Poona, Nagpur, the Nizam's Territory, the Santal country, and district missions near their city centres, while the United Presbyterian Mission occupied the territory of Rajputana. The Union was clear gain. There was no overlapping before to be remedied now by curtailment and migration. If Union could be brought about between the Missions of the Church of Scotland and the United Free Church, there would be a series of Christian garrisons scattered over India that would be impressive and mutually supporting. In view of the Union of these two Missions in Calcutta, recently sanctioned, it is not quixotic to entertain the dream that a comprehensive union will one day take place.

In recent years the United Free Church has issued a series of handbooks dealing with its various Mission fields. It is from these handbooks that the following account of its Missions has been gathered.

The Mission at Calcutta was simply Dr. Duff's work in 1843 (begun in 1830) transferred from the Church of Scotland to the Free Church. He left the building he had only recently erected and entered, and for two years it remained empty. All his colleagues, teachers and pupils went with him. Most of his chief supporters at home belonged to the party of the Church of Scotland that went out in 1843. After a long period of wandering about in search of a site, during which time Duff's school was held in hired premises, he settled down in a district of Calcutta near the river. There in 1857 was built a handsome college and school in commodious and well-equipped premises which cost £15,000. It was a spirit of chivalry that took him away from Cornwallis Square, the site of his first college. There was a site available in the next compound, but he decided to take his work into a congested quarter a mile to the westward. As Calcutta has developed, his second site has turned out to be unfortunate for educational purposes. His college is situated in the midst of jute and rice warehouses far away from the city's educational centre and remote from the student population. As the city has grown, the disadvantages of the site for education have been intensified, and it was practically decided some years ago either to unite with the Church of Scotland, or to remove the college to some more suitable site.

The school and college that Duff founded in 1843 and installed in its new building in 1857 has had a striking career. For many years while Calcutta was sparsely provided with schools, Duff's school had from 1,200 to 1,800 pupils. The highest numbers were reached after Duff had left India. But gradually education spread in Calcutta, and with the increase in the number of schools the number of pupils attending any one school diminished. No such school is possible or desirable to-day.

Round the college and school there grew up the usual activities. Some pupils were trained in theology. The college was affiliated to the University of Calcutta in 1857, and from the first its students took a good place in the University.

A native church was built and gradually attracted a group of leading Bengali Christians. A Christian Home for students and converts was established.

In course of time the European staff was increased, and woman's work was extended. The Zenana Mission and the Boarding School were accommodated in the same premises till 1888 when the Zenana Mission entered a new building and underwent great developments. Subsequently the Girls' Boarding School and Orphanage, having grown greatly from the original orphanage of the early days of the mission, was housed in one of the best planned buildings for that purpose in Calcutta. The woman's work of the Mission has been very successful. The men's work has been largely a conquest of the difficulties of an unsuitable site, and has been in the circumstances singularly successful. For nearly 30 years an almost unique open air service has been conducted Sunday after Sunday in Beadon Square, but this form of activity has during the recent political unrest in Calcutta been severely boycotted, and though still maintained is in the meantime little more than a name.

In all these forms of activity, education, preaching, zenana visiting, training of agents, training of teachers and Christian development the Mission has done conspicuous work often in very adverse circumstances in the past.

Bengal Rural Mission.

The mission district worked by the United Free Church is in the Hughli and Burdwan districts. The leading centres are Chinsurah, Kalna, Mahanad. Kalna is now principally a medical mission where three doctors (two men and one lady) minister to crowds of sick people. On dispensary days sometimes as many as 500 patients have to be attended to. There is a large hospital with separate blocks for men and women. The malarious district keeps the medical missionaries busy. Their excellent work has been acknowledged by the Government of Bengal which gave a liberal grant to the erection of a new hospital. The mission at Kalna dates from 1843. Its activities were educational and evangelistic. About 1899 the medical mission was organized. There is a small Christian congregation. At Chinsurah there is a High School which dates from 1849, though the present

building is less than ten years old. The Christian congregation meets in a church which was handed over to the Free Church by the London Mission in 1849. At Chinsurah also lives the district missionary who has to superintend stations to the north and west. At these centres educational and evangelistic work is carried on, and although there is no qualified doctor, a good deal of medical aid is rendered to the inhabitants of a malarious tract of country. The missionary at Chinsurah is a distinguished Bengali scholar who in addition to superintending the mission work of a large district has written two commentaries which have been highly commended by competent authorities.

The work of the Women's Mission is very actively carried on at Hughli and Kalna (where lady missionaries from Scotland are at work) and to a smaller extent at other centres which are supervised from Hughli.

The United Free Church maintains two European congregations in India, one at Calcutta and the other at Bombay. They are both the offspring of the disruption of 1847. They minister to Scotsmen and others who adhered to the Free Church in 1843 and their successors.

The ministers are usually selected in Scotland by a special Commission. The congregations are managed by Kirk Sessions and Deacons' Courts, the members of which are elected by the congregation. The congregational Funds are vested in Local Trustees. The congregations are entirely self-supporting. The income is derived from subscriptions, offertories, and interest on endowments. The congregations are represented on the local mission Councils and Presbyteries. Both congregations occupy a worthy place in the estimation of Scotsmen in Calcutta and Bombay.

MADRAS.

Madras is the centre of the largest and best organized mission of the United Free Church in India. In the recently published "Story" of this mission, the progress of the mission is thus summarised :—

"In 1837 there was one missionary; in 1907 there are twenty-six—fourteen sent out by the Foreign Mission Committee, and twelve by the Women's Foreign Mission of our Church. There were no Indian ministers of our mission then, now there are seven. There were no congregations then, now there are five fully organized. There were no members or adherents then, now they number over 2,500."

In the Southern Presidency there is a different atmosphere from the north of India. There is the hereditary influence of an ancient Christianity that dates from the early centuries of the Christian Church, and tradition would have us believe that the Apostle Thomas actually visited the land. In 1542 Francis Xavier included South India in his world-wide tour. In 1705 Ziegenbalg set out for Tranquebar. But it was not till 1726 that a missionary settled at Madras. This was Schultze, the successor of Ziegenbalg. Before the 19th century began there were 4,000 converts in Madras.

In 1835 two chaplains of the Church of Scotland established a school on the lines of Dr. Duff's in Calcutta and sent home an appeal for a missionary. In 1837 that missionary, the Rev. John Anderson, after having seen the work in Calcutta, arrived in Madras. He began in a rented house with 59 boys. The prospectus indicated that the school was to follow the lines of Dr. Duff's school, and ambitiously included in the list of subjects "the elements of astronomy and political economy, logic, moral philosophy, and natural theology; the evidences and doctrines of Christianity."

Under Mr. Anderson the school rapidly grew. A colleague arrived from Scotland in 1839. Then came the first blow. Three pariah boys had been innocently admitted into the school. The caste pupils protested vehemently when they discovered it, and demanded the expulsion of the offending pupils. Mr. Anderson fought out the battle of caste, retained the boys, though the struggle cost him over one-third of the pupils. But the day was gained. Part of Anderson's plan was to establish branch schools in important centres in the Presidency. Conjeveram, Nellore, Chingleput, Tiruvallur soon had schools. A school was also begun at Triplicane in Madras.

In 1841 came the baptism of two of the senior pupils. A storm of fanaticism broke out. But the youths declared before the magistrate their intention to remain with the missionaries. The school was nearly emptied: only 70 pupils remained out of 400. Subsequent baptisms did not create the same opposition perhaps, but whenever a convert of good family was baptised, the stress was great. But after each emptying of the school the numbers grew again. In 1843 came the disruption of the Church of Scotland and the Mission went over bodily to the Free Church. The Christian public of Madras subscribed £1,700 to start them. As the work of the mission had been carried on in rented premises, no real property had to be sacrificed.

There was no break of system or of staff. The Free Church carried on the work begun by the Church of Scotland with ever-increasing success. In 1855 Mr. Anderson died, and with him the first period of the mission may be said to end. He was a man of rare enthusiasm and insight.

The second leader was William Miller who landed in Madras in 1862 and has been till recently in the field. He has now gone to Scotland in broken health, but the indomitable will of the man may yet bring him back to his beloved Madras.

When he came, the mission was reduced to great straits. The death of Mr. Anderson and the failure in health of other members had wrought havoc with the school. For a time Dr. Miller was the only representative of the church. This gave him the opportunity of working out his ideas. By 1864 equilibrium had been restored. Finances flourished, discipline was good, and the staff was replenished. In 1865 a college class was added. This was carried on to the B.A. stage and candidates were presented for the B.A. examination in 1869. Dr. Miller was not yet satisfied. He planned to have a Central Christian College in Madras for South Indian Missions. The Church Missionary Society and the Wesleyan Missionary Society gave grants to the College. Other missions agreed to send students. In this way the Christian College was started in 1875. The Free Church of Scotland was responsible for £1,400 a year, the C. M. S. for £300, and the Wesleyan M. S. for £300 for a man.

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The success of the last thirty years has shown the wisdom of Dr. Miller's experiment. The Christian College has been a worthy fortress of Christianty in South India and its influence has been simply incalculable. Behind the loyal and able staff there was the master mind of Dr. Miller. His services to education were recognised not only in his College but by the authorities. From Aberdeen University came the LL.D. degree, from Edinburgh the D.D., from the Government of India the C.I.E., for his services in connection with the Education Commission. The citizens of Madras and former students have erected a statue of him in Madras. His is probably the best known name among contemporary Indian missionaries.

The College is prosperous in every way. It has 800 students in addition to 900 schoolboys. It occupies a fine site, though the arrangement of class rooms is now rather antiquated. The new University regulations necessitate more and better accommodation than was permissible before, and friends of the College will doubtless give additional buildings to an institution of which any church or group of churches may well be proud.

Medical mission work was carried on for some time. Dr. Paterson came from home in 1856 as the agent of the Edinburgh Medical Mission and he was closely associated with the Madras Mission. He left in 1870 and died soon thereafter. His successor was Dr. Elder, who belonged jointly to the Edinburgh Medical Mission and the Free Church Mission. He retired in 1883. No successor came from home, and the dispensaries were handed over to the Women's Foreign Mission, whose medical work is reported on below.

There are two Christian congregations of this mission in Madras, one in the College Church and the other at Royapuram. Both are solid Christian congregations. The Royapuram congregation supports the catechists in charge of a neighbouring village congregation. The Indian Churches of this mission and the Arcot Mission (Dutch Reformed Church of America) united in 1902: and since then they have likewise joined the Presbyterian Church in India which was constituted in 1904.

District Mission.

Chingleput, 35 miles from Madras, is the centre of a great variety of mission work and experiment. The first beginning was a school planted down by Mr. Anderson as a branch of the Madras Institution in 1840. It has now 300 boys. The first resident European missionary was a German. It was not till 1879 that a Scottish missionary arrived—Mr. Andrew—and he is still the directing mind of the district. He greatly increased the number of catechists and successfully evangelised the district. From Chingleput there sprang up three other stations, Walajabad, Conjeveram, and Sriperambadur. Experiments have been made in settling Christian peasants on land granted by Government to Mr. Andrew. The colony at Melrosapuram is very successful. The children are taught not only the three R's but also agriculture, rope-making and mat-weaving. In other colonies the results are not yet so well-marked. The work of Mr. Andrew in raising the lot of the depressed classes was rewarded by a Kaisar-i-Hind medal. The Christianisation of the villagers has been satisfactory.

Conjeveram, about 50 miles from Madras, one of the sacred cities of Hinduism, was visited casually for many years as part of the mission work of Madras. But in 1889 this unsatisfactory arrangement ceased by the arrival of a resident medical missionary, who was soon, however, transferred to the neighbouring village of Walajabad. His successor has reverted to Conjeveram, but medical work is carried on equally in both places. A hospital has just been opened at Conjeveram. Primary schools have been established, and there is a vigorous Indian Christian congregation.

Sriperambadur has had a resident missionary only for nine years, and work is still in its beginnings.

Women's work in Madras and district is of high quality. The Christian Girls' Boarding School in Madras, where 150 boarders and 100 day-scholars are taught by skilled teachers and gradually led up to the Matriculation standard of the University, has an excellent building and ample grounds. The seven Hindu girls' day schools in the city with 1,000 pupils bring enlightenment into the only too-brief years of the Hindu girls' school-life, and as far as possible in that time give the elements of a sound education.

At Chingleput Boarding School lace-making and other useful arts are taught in addition to the ordinary school course. Small schools for Hindu girls are scattered throughout the district evangelised by the mission.

There is a training school for female teachers in connection with the Madras Boarding School, with an average attendance of 25 a year. They are given a one-year's course, and are sent out to teach. The Madras Presidency is ahead of other Indian provinces in its training of teachers.

The Zenana Mission in Madras experiences great difficulties owing to the bigotry of its Hindu women. But the educational advantages offered are eagerly welcomed. Scottish ladies and Indian Bible-women carry on systematic work in many homes both at Madras and the district centres.

Medical Mission Work for Women.

In 1888 the first woman doctor sent out by the Free Church began work in the dispensary formerly used by Dr. Elder. Since then great extensions have been made. A hospital for women was provided: another woman doctor was sent; a new dispensary was opened in another part of the city. Six thousand five hundred patients annually pass through the dispensaries. The hospital has 600 patients a year. In the district dispensaries 11,000 patients are treated every year. The medical work brings in over £500 in fees.

Mahratta Missions.

Under this heading we may group mission work at Poona, Bombay (with Alibag), Nagpore (with Bhandara and Wardha) and Jalna.

Poona.

Mission work was begun by Scottish missionaries in the intellectual capital of the Bombay Presidency in

1829, amid bitter opposition from the Poona Brahmins whose bigotry (or orthodoxy) is notorious. It was very up-hill work; but schools were established and successfully maintained. The High School was carried on till 1888 when it was closed. Bazaar preaching on ordinary lines, proving more or less casual, was supplemented by more systematic teaching and discussions in hired rooms. Religious work among students in Poona has been in many cases fruitful of a higher life, but has not as yet led to many baptisms. The Christian congregation in Poona, probably because of opposition, has developed a vigorous life. Two ordained missionaries by word and pen are now expounding Christianity in Poona to its very critical audiences. Among the villages evangelistic work is diligently carried on.

Women's work is represented by a good Boarding School for Christian girls, Hindu girls' day schools and zenana visiting.

Bombay.

The Wilson College is the principal agency of the mission in Bombay. It is named after the founder of the mission, Dr. John Wilson, a man of tremendous learning and unique personality, who arrived in Bombay in 1829. He started a school in 1832, prepared text books for it, and was at once successful. The Church of Scotland took over the mission in 1835. For many years Wilson, Nesbit, and Murray Mitchell made the school prosper. Learned debates with Hindus and Mussalmans were carried on by Wilson who was a rare protagonist. Unwearied with this contest, when attacked by Parsis, he replied with a trenchant exposition of the Parsi religion. Two Parsi students were baptised in 1839 amid fierce excitement. One of them after being educated in Scotland became, and still is, a missionary of the church. But these baptisms emptied the school for a time. Other baptisms were those of Naravan Sheshadri (in 1843) and Baba Padmanji (in 1854).

In 1857 the University of Bombay was founded. Its policy was largely shaped by Dr. Wilson, who was distinctly the greatest personage in Bombay. Under the University régime the school and college made great progress.

In 1874 Dr. Mackichan, the present Principal of the College, arrived in Bombay, and from the first devoted his splendid energies to the development of the college. From funds raised in Scotland, largely supplemented by a Government grant, a new college was built, and opened in 1889, as a worthy memorial of the great Dr. Wilson. The College occupies one of the finest sites in Bombay. It is regarded as the chief centre of religious work among the educated classes in the city. It stands very high in academic reputation. Its students gain many honours in the University, and its influence upon the life of the community, though perhaps not so great as that of the Madras Christian College, is the highest in the city.

The High School is similarly successful. The women's work in Bombay includes the usual union of forces, *viz.*, Christian Girls' Boarding School, non-Christian Girls' Day Schools, and Zenana visiting. The mixture of communities in Bombay considerably modifies the influence of the *purdah*, and lady students (Parsis and others) are frequent attenders at the Wilson College.

The district work in the Konkan is superintended from Alibag, where since 1880 an Indian missionary and from 1895 a European missionary, have been stationed. The duties of the missionary include preaching, superintending, training catechists, and itinerating. The work amongst women and girls is superintended by his wife.

Nagpore.

This mission began in 1844 with money handed by Captain (afterwards Sir William) Hill to Dr. Wilson for this purpose. The money was promised before the Disruption. But the mission was not sanctioned till after that event. Thus, it was entirely a Free Church Mission. The first missionary was Stephen Hislop, who in 1864 (after touring his district thoroughly) opened his first boys' school in the city of Nagpore. Here too there was a fight over the admission of low-caste pupils, and over the first baptisms. As Nagpur did not become British territory till 1853 the mission had to face all the opposition of a Native State.

In 1858 fine buildings were erected in the city. The Christian congregation had been steadily growing, and under Hislop the activities of the mission were healthily developing. Then came the great catastrophe of the mission in the death by drowning of Hislop in September 1863, as he was returning to head-quarters from an outstation. He was a distinguished naturalist and a man of great sagacity whose loss at this stage seemed almost irreparable. He was the trusted friend of high officials as well as of the humblest Christian. But the progress of the mission was not to be held back. Nagpore is considered a model mission because of its variety of activities in a compact little city which the mission permeates. It has a college which, though it cannot compare in numbers with those of Bombay, Madras or Calcutta, is yet relatively as important from a Christian point of view as any. The evangelistic work is very thorough. Primary education is diligently carried on. Outstations are superintended from the city. A dispensary for men does useful work.

Medical Work among Women.

Nagpore shares with Madras the honour of having a woman's hospital under this church. At each station two medical women are maintained, and probably in future three will be provided. The women's hospital is nearly always full. Patients come from great distances. The medical mission was begun by a donation from the late Sir William Henderson of Aberdeen. The income provides the salary of a woman doctor. His daughter was the first incumbent of the post. She has recently had to resign owing to ill-health, brought on by heroic labours in epidemics to help poor people. Government rewarded her services with a Kaisar-i-Hind medal.

Girls' schools and zenana visitation are systematically carried on. For Christian girls there is a boarding school.

Near Nagpore is Bhandara which has really sprung up owing to the labours of one Native Christian family. It was made a regular station in 1881 and has since had a European resident missionary (now two). It has also a flourishing medical mission with dispensary and hospital which report over 11,000 cases per annum.

Owing to recent famines and the need of providing for famine orphans, Bhandara has developed into an orphan centre. As the boys grow up, they are taught to earn their living either by agriculture or by employment in the mills of Nagpore or on the railway.

Wardha.

This station in the coal region of Central India was opened in 1889 by a benefaction from Mr. J. T. Morton of London. A medical missonary was appointed. He at once opened a dispensary and in 1901 a hospital. There is also a school and a small Indian Church. Work among women and girls is carried on systematically.

Jalna.

Jalna is about 210 miles north-east of Bombay in the territory of the Nizam of Hyderabad, and near the battle-field of Assaye. There is, however, a British cantonment in which the head-quarters of the mission are situated. But the district is under the Nizam. Work in this mission is distinctly among the lower and depressed classes, especially the despised Mangs and Mahars. Dr. Wilson visited Jalna in 1832 and was impressed with its suitability as a mission centre. In 1855 he sent a catechist at the request of some officers. Then came the mutiny and the work was stopped. In 1861 Dr. Murray Mitchell visited Jalna and in the following year sent a convert as colporteur. It was arranged that Narayan Sheshadri (whose baptism has been mentioned under Bombay) should superintend Jalna from Indapur, 150 miles away. He soon found that Jalna was the better centre and migrated there. Schools were started: a Christian congregation was formed. Villages in the neighbourhood were evangelised. Every year a considerable number of baptisms took place.

But the number of converts raised a new problem of their support and ultimately forced Narayan Sheshadri to found a Christian village on 800 acres of land conveyed by Sir Salar Jung to Narayan Sheshadri. This is the Christian village of Bethel, where a church was built on its highest point in 1879. For over a quarter of a century Sheshadri, the Brahman, worked among these out-caste Mangs. It must be admitted that as a Christian experiment Bethel was not a success. But the Christian community gathered was considerable and work among them has greatly elevated the people.

In its recent development the mission has two leading characteristics. It has a medical mission manned by two doctors, and a Training School for catechists. The first doctor arrived in 1890 and alone for four years he did everything, medical, evangelistic and educational. Then, in 1894 he was joined by an ordained missionary who took the ministerial work off his hands. In 1904 a second doctor arrived. In this mission a great deal of social work has to be done. The ignorant peasantry have to be rescued from the money-lender and the extortioner. They have to be taught often the first elements of morality, and gradually to be raised to a higher moral plane. The Christian congregation for the sake of its own life has to be very strict in matters of discipline. But in spite of these facts the Christian progress of the community is satisfactory. No mission in the United Free Church better exhibits the social value of Christianity.

Work among women is carried on by lady missionaries. The absence of caste-restrictions considerably modifies the conditions of work among women and girls.

Rajputana Mission.

This Mission was brought into the United Free Church by the United Presbyterian branch of the church. Unlike the Free Church India Mission which was distributed over three provinces and a Native State, the United Presbyterian Church concentrated their efforts in a well-defined area and among a homogeneous people, with one language (Hindi) as contrasted with the six languages which complicated the labours of the Free Church missionaries, *viz.*, Bengali, Tamil, Telegu, Mahratti, Hindi, Santali.

The United Presbyterian Church began mission work in India after the Mutiny. The Synod in 1858 resolved to undertake such a mission. After consulting other missionary societies about a field, they selected the district of Ajmere, which geographically is the centre of Rajputana, and politically is British. The first station projected was Beawar, the second Ajmere, about 50 miles apart. To each station two missionaries were to be assigned. Only two men could be found, however, and they set sail for Bombay. To reach Ajmere a wearisome journey by bullock cart was necessary and the strain and exposure were too great for one of the men, and he died before reaching his station.

The other, Mr. Shoolbred, reached Beawar in March 1860. The death of his companion stimulated the home church and they sent out five additional missionaries and their wives. Before the mission was ten years old a score of workers had come from Europe.

The idea of the founders of the mission was to occupy ultimately about a dozen of the 20 States of Rajputana, commencing with the British district, and gradually pushing outwards into Native States. The first advance was made in 1861 when Nasirabad was occupied, even before Ajmere which was manned in 1862, Todgarh following in 1863. Dr. Valentine settled at Jaipur in 1866, but it was not then deemed a regular station of the mission.

Rajputana is one of the unfortunate regions of India. At best visited by a meagre rainfall, any failure of the monsoon usually punishes this province severely. Famine follows, thousands die, and orphans make their pathetic appeal to philanthropic hearts, and not in vain. Time and again this fateful cycle has repeated itself, insufficient rain, failure of rain, famine prices, starvation, orphans.

The first occurrence in the history of the mission was in the famine 1868-70. Eight hundred orphans were almost thrust upon the mission. The home church nobly undertook their maintenance. But death from famine weakness reduced the number to 500, who were distributed among the four stations, where they were educated as Christians and trained for work, some as mission agents, others as artisans.

In 1870 the station of Deoli, south-east of Ajmere, was opened, and in 1872 Ashapura near Deoli. In 1872 Jaipur was formally occupied as a station of the church.

In 1877 Udaipur, south-west of Ajmere, was occupied by Dr. Shepherd who still holds the fort. In 1880 a man was stationed at Alwar, north-east of Ajmere.

In addition to the ordinary teaching and preaching at first undertaken, medical work was added. Medical missionaries were stationed at Beawar, Ajmere, Nasirabad, and Udaipur. Three of these were afterwards ordained by the local Presbytery established in 1880.

In 1885 the Presbytery licensed five native preachers who became the firs accredited native ministers.

The following notes on the history of some of the stations may be interesting.

Beawar was founded in 1860, a school was established at Naya Nagar. Medical work began in 1862 under Dr. Valentine. The first convert, a Brahman, was baptised in 1863. A church to hold 500 was opened in 1873. A native pastor was ordained in 1866. The church prospered under him.

Ajmere.—In 1861 a missionary visiting it to prospect found a Christian family. The first missionaries had to live far off from the bazaar. In 1869 a school house and a large hall were built. In the hall the church met. The first convert was a Jain priest, who became a devoted Christian worker. In 1871 medical work was begun by Dr. Husband who opened a dispensary and later on a hospital, and who for some years was Chairman of the Municipality. Government subsequently rewarded his services by conferring on him the C. I. E. decoration.

Nasirabad.—The chief British military centre in Rajputana was opened in 1861 as a mission station. One of the first converts was a Mussalman who had a great gift of song. He wrote some of the most popular Christian *ghazals.*

At Ashapura, near Nasirabad, a Christian colony was planted from among the famine orphans. In recent years after a later famine, Ashapura was crowded with famine orphans. There has been medical work since 1873, with a dispensary. The Mission School has developed into a High School in premises given by the Municipality. A handsome church was erected in 1886. But the congregation is small.

Jeypore.—In 1866 Dr. Valentine was appointed physician to the Maharajah. In his high position he helped on Christian work. In 1871 the Maharajah gave him a piece of ground for a bungalow which he handed over to the mission. In 1872 it was occupied as a regular station by the mission. Educational work is well organized. The congregation is still small as the opposition in Jeypore to Christianity is considerable.

Udaipur.—Dr. Shepherd made friends by his medical skill and obtained suitable ground for a bungalow. Later on another medical missionary obtained a site for a hospital, which was built with funds raised by Dr. Shepherd at home, and was opened in 1886. From Udaipur as centre a mission to the Bhils is supervised. Dr. Shepherd has won their confidence, and induced Bhil boys to enter his Bhil home at Udaipur. A beautiful church was opened in 1891, though the Christian community is still small.

Jodhpur, the capital of Marwar, was not occupied as a mission station till 1885 when Dr. Sommerville went there; but such hostility prevailed that he could not obtain a foothold till 1886. By his medical skill he disarmed hostility and at last the Maharajah gave a site where a bungalow at his cost was to be built for the mission. This bungalow was built and occupied in 1887. Medical work is the distinctive feature of this mission.

Woman's Work.

The first work in each station was done by the wives of missionaries. But gradually it was found necessary to send out ladies from Scotland to overtake the work. In almost all the larger centres there are agents of the Woman's Foreign Mission, who teach Hindu girls in day schools, Christian girls in boarding schools, nurse and tend famine orphans and train them up in useful arts. The first zenana missionary was Mrs. Drynan, the widow of a missionary who began work in 1866. It was after 1880 that zenana work was adopted as a regular branch of the mission, and ladies came out from home in sufficient numbers to occupy the stations. The principal stations where woman's work is carried on are Ajmere, Nasirabad, Jeypore, Beawar, Alwar.

The Santal Mission.

In our survey of the Mission fields of the United Free Church we started from Calcutta, visited Madras, city and district, then Poona, Bombay, the Konkan, the Central Provinces, the Nizam's Dominions, and Rajputana. Turning eastwards we come to the Santal Mission in Behar, Bengal Proper and Chota Nagpore.

The Santal Mission is not in the Santal Pergunnahs. In that district the C. M. S. and the Scandinavian Mission were already at work when Dr. Duff in the cold weather of 1862-63 toured among the Santals with a view to establishing a mission among them, to be maintained by Calcutta merchants. Nothing was done at that time, but in 1868-69 Dr. Murray Mitchell, after touring the district, recommended the starting of a mission. Pachamba near Giridih was chosen as the first station: Sir Wm. Mackinnon and Mr. Peter Mackinnon subscribed liberally to this mission from the start. At first the station was under the charge of a Eurasian gentleman. The first missionary from Scotland was Dr. Templeton, a medical man, who arrived at Pachamba at the end of 1871. In the following year there came Mr. Andrew Campbell (now Rev. Dr. Campbell) as an industrial missionary. Dr. Templeton began medical work with a dispensary and a small hospital. In 1874 he was invalided home, and though returning in 1875, he was finally invalided home in 1876. Dr. Dyer joined the Pachamba Mission in 1875 and Mr. Stevenson in 1876.

From Pachamba as centre, extensions were made in two directions to the S. E. and to the N. Two stations

were founded which are now more Santal than Pachamba itself. At Toondee or Pokhuria since 1879 Dr. Campbell has built up a mission of great interest and social value. In 1879 land was obtained at Chakai or Bamdah, and the bungalow was completed in 1887 by Dr. Dyer who went there for a few months. Dr. Macphail who came out in 1889 has been the real builder up of the Chakai Mission.

A few lines will have to suffice for detail. The parent mission at Pachamba is chiefly a medical mission. Dr. Dyer superintends the evangelistic work of the preachers and the educational work of the teachers in boys' schools. He is a very successful doctor and eye-specialist. At Toondee (Pokhuria) besides a large church and good schools, Dr. Campbell has established various industries—a printing press, silk spinning, cotton weaving and other arts. Dr. Campbell has had to fight famine in his district and has been entrusted by Government with the superintendence of famine relief works. He is an admirable magistrate, greatly trusted by the people as the arbiter of their quarrels. He is an authority on the Santali language, and his Santali Dictionary is recognized as a standard. He is a Kaisar-i-Hind medallist. Dr. Campbell is one of the greatest industrial missionaries in India. His knowledge of his district is unrivalled. Although not a medical man, he is forced into relieving sickness and disease in his neighbourhood.

At Chakai Dr. Macphail has built a handsome church which is a conspicuous landmark in the beautiful undulating country where he lives and works. A hospital and dispensary, built not many years ago, is too small already, so great is his fame as a doctor and an eye-specialist. He performs an astounding number of operations for cataract every year.

Dr. Kitchin is the latest addition to the mission. His present duty is to supply the place of Dr. Dyer at Pachamba; but he will soon have to begin the founding of a new station west of Pachamba. This will also be primarily a medical mission. In all the medical missions of the Church evangelistic and educational work is carried on energetically.

From this detailed survey of the field of the United Free Church in India two facts are obvious—

(1) This Church does an immense amount of educational work in Primary and High Schools, and in addition has hitherto carried the burden of four Arts Colleges.

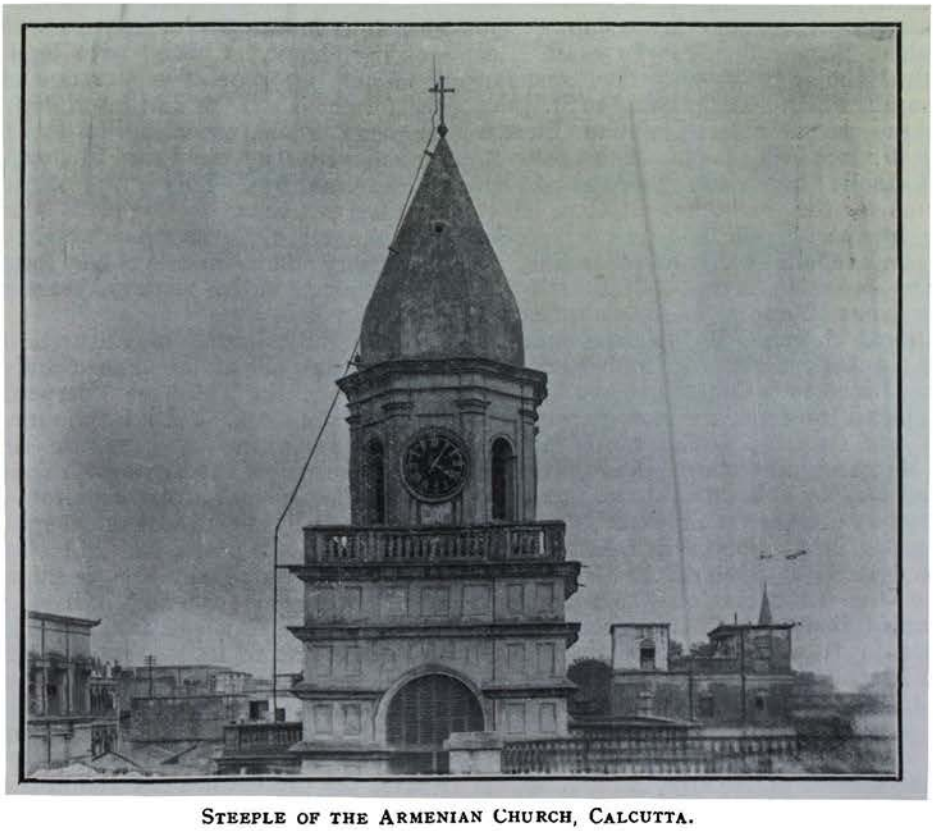
(2) This Church is almost in the forefront of Indian missions in the number of its medical missionaries.

By these means its contributions to the social well-being of India are considerable. Its women missionaries form a large contingent of its workers, and carry the benefits of teaching and healing behind the *purdah*. It thus occupies an important place among the philanthropic agencies of the Indian Empire.

The

Armenian Church in India.

THROUGH much tribulation and oppression, extending over many centuries, the Armenians would appear to have lost almost everything they once possessed as a nation, save only their nationality and their religion. Like the Jews, they are now a scattered people, with small but important communities in various parts of Europe, Asia, and America, enjoying that security of life and property denied to them in their own land. At precisely what period Armenians first found their way to India is purely a matter of conjecture; but sufficient evidence exists to show that in very remote times there was a commercial connection between Armenia and India, by way of Persia, and that cordial relations existed between the peoples of the two countries. It is stated that in the earliest days of the Christian era the headquarters of Armenian merchants was at Benares, or rather, at Kasi, at that time a great commercial emporium of India, on the site of which now stands the city of Benares. But the real influx appears to have set in at the period when the Mogul Empire was at its zenith, and the splendours of Akbar's Court at Agra induced the Armenian merchants to form a commercial colony at that historic capital. Here was built the first Armenian Church in India of which any record exists. Other places of worship there may have been; for it is claimed for the Armenians that in every country in which they settle they retain their distinct religion; and that had it not been for the remarkably strong hold maintained on the race by its national Church, the nationality of the people must, ere this, have been lost. The Emperor Akbar appears to have entertained a strong regard for the Armenians; in fact, the community seem to have flourished exceedingly under all the Mogul Emperors, and it was at the express wish of their Royal patron that the first Christian Church was built at Agra in 1562. With the downfall of the Mogul power the Armenians deserted Agra, and the only records now to be found of their sojourn there are the Armenian inscriptions on the tombstones in the old cemetery, among which are recorded the deaths of several priests.



STEEPLE OF THE ARMENIAN CHURCH, CALCUTTA.

Before the fall of the Mogul Empire, the Armenians had also established themselves at Surat, but exact dates with reference to this settlement are not in evidence. Driven from Persia, where by their commercial pursuits they had amassed considerable wealth, and had in consequence excited the cupidity of the Persian monarch, a number of Armenians reached Busrah, and thence sailed for India, forming a permanent settlement at Surat. Here they built two churches, and were exceptionally successful in their commercial pursuits, until hostilities between the French and English broke out, which proved the death-blow to Armenian commercial activity in Guzerat. Of the two churches which they built, one

is still in existence, but is not in use; while the other lies in ruins in the old cemetery, which itself contains convincing proof of the flourishing condition of the community in the middle of the Eighteenth Century.

It was in the days of Mogul supremacy that the Armenians first founded settlements in Bengal, and when Murshidabad, the seat of the Viceroys of Bengal, was at the height of its glory, the Armenians formed a permanent settlement at Syedabad. the commercial suburb of Murshidabad, by virtue of a Royal *firman* issued in 1665 by Aurungzebe, the Mogul Emperor of Delhi, granting them a piece of land at that place, with full permission to found a colony there. This they did, and success here, as elsewhere in India, attended their commercial undertakings. It was not, however, until nearly one hundred years later that a church was erected at Syedabad, though the Armenians had a church at Chinsurah built in 1695. From the earliest days of their settlement in Bengal, the Armenians had attached themselves to their confreres in trade, the Dutch at Chinsurah, under the leadership of the famous and opulent Margar family, who were high in favour with the Mahomedan rulers. The Armenian Church at Chinsurah, which was dedicated to St. John the Baptist, is the second oldest Christian Church in Bengal, pride of place being taken, in this respect, by the Roman Catholic Church and priory at Bandel, which was erected by the Portuguese in 1599, burnt to the ground by the Moguls in 1632 during the siege of Hughli, and rebuilt shortly afterwards by its worshippers. The Armenian Church at Chinsurah was erected by the pious Margar family, alluded to above, as a national church. Its splendid steeple, which serves as a belfry, was not built until the beginning of the Nineteenth Century, when it was added to the church by Sophia Simon Bagram, an Armenian lady of Calcutta. The most famous member of the Margar family was Khojah Johannes Margar who died in 1697 and whose tomb may be seen in the cemetery at Chinsurah to this day. It bears an interesting inscription in Armenian verse. When Chinsurah lost its commercial importance, it was deserted by the Armenians, but the national church they founded there is still in existence and services are held in it at the present day. The Armenian Church at Syedabad was not built until 1758. It is still in existence, but is used only occasionally for purposes of divine worship, a service being conducted once a year by the Armenian priests connected with the Church at Calcutta.

The oldest Christian Church in Calcutta, and the second in point of antiquity to that at Chinsurah, is the Armenian Church, known as the Holy Church of Nazareth, situated in Burra Bazaar. It was erected in 1724, and the belfry was added ten years later. Previous to this, however, there had been an Armenian place of worship near by the site of the existing church, and built of wood. Even before Job Charnock had made that celebrated halt by the banks of the Hughli, the Armenians of Chinsurah had attached themselves to the English, and under a Charter, dated 22nd June, 1688, and granted by "The Governor and Company of Merchants of London trading to the East Indies," it was provided amongst other things that:—"whenever forty or more of the Armenian nation shall become inhabitants of any garrison cities or towns belonging to the Company in the East Indies, the said Armenians shall not only enjoy the free use and exercise of their religion, but there shall also be allotted to them a parcel of ground to erect a church thereon for worship and service of God in their own way. And that we also will, at our own charge, cause a convenient church to be built of timber, which afterwards the said Armenians may alter and build with stone or other solid materials to their own liking. And the said Governor and Company will also allow fifty pounds per annum, during the space of seven years, for the maintenance of such priest or minister as they shall choose to officiate therein." But that Armenians had established themselves in the vicinity of what is now Calcutta long before this Charter was granted is shown by an inscription on one of the grave-stones in the old Armenian Burial-ground, over some of the graves in which the present church is built. The courtyard which surrounds the existing church is paved with tombstones, most of them old, but some of very recent date; and among the former is one with an inscription in the Armenian language which, according to the translation made for the writer by the Priest in charge, bears the date of the year 1633. This is the oldest Christian grave that has yet been discovered in the city, and it is monumental evidence which would seem to support the theory that Armenians had formed some kind of a settlement in the vicinity, years before the coming of the English.

The Holy Church of Nazareth was upwards of thirty years old at the time Suraj-ud-Dowlah laid siege to Calcutta, when were perpetrated the horrors of the Black Hole. Out of the turmoil of those days it passed uninjured, and on two separate occasions before the end of the Eighteenth Century, in 1763 and 1790, the church was repaired, improved and embellished by prominent members of the Armenian community in Calcutta. In the last-named year the expenses of the repairs and additions were borne by a public-spirited Armenian citizen, Agah Catchick Arrakiel, who built a wall around the church compound and erected the adjacent parsonage. He also presented the church with the clock which still adorns the belfry, and which has been keeping time for considerably more than a century. The third storey of the parsonage was added recently, by Mr. A. G. Apcar, the present head of the firm of Messrs. Apcar & Co., who is a connexion by marriage of Mr. Agah Catchick Arrakiel. Mr. Catchick Arrakiel was a wealthy merchant, an old inhabitant of the settlement, who, in consideration of his public-spirited acts of generosity, was selected by George III, at that time King of Great Britain, as a recipient of his special favour. Before the Royal gifts reached India, however, Mr. Arrakiel had died, and the presents, which consisted of a miniature portrait and a valuable sword, were made over to his eldest son, Mr. Moses Catchick Arrakiel, by Lord Cornwallis, the Governor-General, at a public levée at Government House. Agah Catchick

Arrakiel lies buried within the church, and by his side are laid the remains of his wife, who survived him thirty-five years. In 1837 the Armenian community erected a black marble mural tablet to his memory inside the church. Outside, under a portico at the east end of the church, are some of the more modern graves, the tombstones on which mark the last resting-place of men of mark among the Armenian community. On one of these, erected in 1905, "Sacred to the Memory of Joseph Paul, Esq., of New Julpha, Persia," it is recorded that he was a benefactor of great zeal, who left, by a deed, the greater part of the fruits of his labours, for the establishment at New Julpha of a Free National Hospital for the benefit of the orphans and the poor of that place, and for the repair of the holy churches of New Julpha, Shiraz, and Bushire in Persia. The money thus bequeathed, amounting to upwards of four lakhs of rupees, is now being expended in accordance with the wishes of the donor. Here also are laid to rest the remains of Arratoon Apcar, the founder of the well-known and wealthy firm of Messrs. Apcar & Co., of Calcutta, together with several other members of the family. Arratoon Apcar was born at Julpha in Ispahan in 1779. At the age of sixteen he came to India, and entered the service of an Armenian merchant in Bombay, where he gained experience in the trade with China and Manila. In 1830 he came to Calcutta, where he founded the present firm of Apcar & Co. His was a useful life, and he used the wealth which he acquired for charitable purposes. He endowed the Church of St. Mary at Julpha, in which he had been christened, with many liberal gifts, and also left it a legacy. He died in 1863. The Apcars of the present generation follow the footsteps of their common ancestor in the matter of charitable contributions in aid of their less fortunate fellow-countrymen.

CORNER IN THE GRAVEYARD OF THE ARMENIAN CHURCH, CALCUTTA.
Showing the Porch, near which are the graves of the Apcar Family.

The Armenian Churches in Bengal are possessed of considerable wealth, and the management of the property of the Holy Church of Nazareth at Calcutta, and of the Church of St. John at Chinsurah, is vested in a Committee consisting of eleven members of the Armenian community resident in Calcutta, or within a radius of fifty miles thereof. These are elected at a general meeting of the Armenian community of Calcutta. The Committee remains in office for four years, and two Wardens are elected from among themselves by the members. These are entrusted with the immediate management of church property and the administration of endowments, funds and charities, under the supervision and control of the Committee.

The Holy Church of Nazareth is a very wealthy church, and its revenues have been largely increased, by judicious investments, during the Wardenship of Mr. A. Stephen and Mr. M. V. Apcar. Liberal contributions are made to the various charities for the benefit of the poorer members of the community, and all needy Armenians have their immediate necessities relieved. Help is afforded to those desirous of procuring work in Calcutta, or of travelling further afield in search thereof. There is also an Alms-house, situated in Pollock Street, which is supported from Church funds; and fifty boys are always in training at the Armenian College, their schooling fees and other expenses being paid by the Church. There being no distinctive Armenian educational institution for girls, a certain number of these latter are sent by the Church to the Calcutta Girls' School, and their fees are paid from Church revenue. In former years there was a girls' department in the Armenian Philanthrophic Academy, but it was allowed to lapse in 1842. There was also in years gone by an Armenian infants' seminary, founded by the late Mesrovb David Thaliatin in 1846, and dedicated to the tutelar Saint, Sanduct, an Armenian princess who suffered martyrdom for her Christian

faith, in the forty-eighth year of the Christian era. The school was self-supporting and comprised both boys' and girls' departments, and instructions were given in the English and Armenian languages. It is on record that the education imparted was in no wise inferior to that obtainable in any of the existing schools of the period, but it did not, apparently, find favour with those for whose benefit it was intended, for the school closed its doors after an existence of only six years, having been but indifferently supported by the Armenian community.

The principal Armenian educational establishment in Calcutta at the present time is the Armenian College and Philanthropic Academy, which was established in 1821. Some years before that, the idea of a national academy for the education of the Armenian youth had been conceived by Mr. Astwadatoor Mooradkon, who left a donation of Rs. 8,000, by will dated 30th July, 1797, for aiding the establishment of such an institution. This sum formed the nucleus of the fund subsequently raised by subscriptions among the Armenian community, with which the College was started. A small Armenian institution, which had been in existence from 1798, was amalgamated with the new college in 1825. The founder of this smaller school, Mr. Arratoom Kaloos, had devoted his life to the education of the Armenians. He died in 1833, and his grave is in the burial-ground of St. Nazareth, to which he bequeathed the sum of Rs. 10,000 for the relief of the poor. His good deeds are recorded on a tablet on the wall of the church, while tributes to the memory of two other Armenian gentlemen interested in the advancement of education are inscribed on tablets within the College itself, namely, Astwadatoor Mooradkon and Manatsakan Varden, the latter of whom was mainly instrumental in raising the subscriptions with which the Armenian College was started.

In addition to the Holy Church of Nazareth, there is an Armenian Chapel which was built in 1907, with money subscribed by a few wealthy Armenian gentlemen. This Chapel, intended mainly for mortuary purposes, but in which other services are also conducted, is situated away to the eastward of the Lower Circular Road Burial ground, on a plot of what was formerly *busti* land. Adjacent is the present Armenian burial-ground . . . a plot of land granted to the Armenian community by the Calcutta Burial Board, on the same terms as regards fees as plots granted to members of other communities. It was at first proposed to erect the new Chapel within these limits, but as the available space is small, and likely to be soon fully occupied, it was decided to purchase outright the adjoining plot of land for the erection of the Chapel, and to leave the land granted by the Burial Board for its original purpose. The Chapel is a neat and compact little edifice, surrounded with a wall and with small grounds, nicely laid out.

In Southern India, Armenians appear to have first settled permanently at Madras in 1666. During the latter part of the Seventeenth and the whole of the Eighteenth Centuries, they attained great commercial success. The trade of the Carnatic was practically in their hands, and they had extensive dealings with Europe and the East. The first Armenian Church was built in Madras in 1712, and it is said to have been one of the few magnificent edifices on the Esplanade at that time. The British Military authorities, however, objected to the location of so lofty a building in the immediate vicinity of the Fort, and it was vacated. The Armenian Church which is now in use was built in 1772. It is situated in Armenian Street, and is dedicated to the Holy Virgin Mary. As in the case of Calcutta, the site selected for the church at Madras was the old Armenian burying ground, originally the property of the famous Agar Shameer, whose wife had been buried there in 1765. A room built to her memory, and still known as Shameer's Room, forms part of the church. There was also a church at Masulipatam erected by Armenians who migrated from Madras about the year 1781.

When Dacca was one of the great commercial centres of Bengal, at the beginning of the Eighteenth Century, the Armenians formed a colony there, a small chapel serving as their place of worship; and five or six miles from Dacca is the old Armenian burying ground, in which the oldest tombstone bears date 1714. The present Armenian Church at Dacca, called the Church of the Holy Resurrection, was built in 1781, the cost being met from subscriptions by four wealthy Armenians, Michael Sarkies, Astwasatoor Gavork, Khojah Petrus, and Margar Pogose. The site was the gift of Agah Catchick Minas, and the belfry was added some time after the church had been built, by Sarkies Johanness Sarkies.

In Bombay, the Armenians first formed a commercial settlement about the middle of the Eighteenth Century, and in 1796 the present Armenian Church in Medows Street was erected. Here an Armenian priest is still maintained, to minister to the wants of his small congregation, and those of the native Christians who have embraced the Christian faith in the Armenian Apostolic Church. The church was erected by Jacob Petrus, a wealthy Armenian merchant of Bombay, at a time when there was not even an Armenian burying ground in the city, and when the Armenians were obliged to bury their dead in their private compounds, without any religious ceremony. Some of the tombstones of these private graves are still in existence, the oldest bearing the date of the year 1767.

The existing Armenian churches at Penang, Singapore, Batavia and Rangoon were built in the order named, in 1822, 1835, 1854, and 1862, respectively.

All the Armenian churches in India, Burma, and Java come under the jurisdiction of the Diocesan Archbishop, who has his seat at the All-Saviour's Convent (Soorp Amenaperkitch Vank) of Julpha, Ispahan, Persia. The name of the present Archbishop is Sahak Ayvadian. For spiritual functions in the different Armenian churches of India and Java, the Archbishop sends out priests from Julpha, whose term of office is generally fixed for three years; at the expiration of which they are relieved from their duties by other priests from Julpha. The right of control in ecclesiastical matters is vested in the Diocesan Archbishop, but final authority is exercised by the Supreme Head of the Armenian Church, who is styled Catholicos of all Armenians, and whose Holy See is at Etchmiadzine.

Freemasonry in India.

In no part of the world is Masonry, in proportion to the European population, so strongly represented as it is in India. It may be calculated that in India there are twenty-two district or provincial ruling bodies for various degrees, some four hundred and ninety private lodges, chapters, preceptories or conclaves, actually working, and some forty to fifty in abeyance or dormant. The District Grand Lodge of Bengal has 61 lodges on its roll, and there are, at the time of writing, at least two new lodges in course of formation. * Madras has 26, Bombay (English) 28, Burma 10, Punjab 25, and Ceylon 5 lodges, working under the immediate rule of the Grand Lodge of England. To the District Grand Lodges of Bengal, Madras, Bombay, Burma, and the Punjab are attached Benevolent funds for the relief of indigent Masons and their near relations, and associations for educating their orphans. The Bengal Masonic Association for the Education of Freemasons, founded in 1869, has now a capital of more than two and a half lakhs, and a considerable income in addition, derived from capitation fees charged on the private Lodges.

Freemasonry, as is well known, is centuries older than the Grand Lodges by which it is at the present day ruled. The Grand Lodge of England itself only came into existence in the year 1717 A.D., when four "Time Immemorial" lodges banded themselves together for the purpose of creating a supreme Masonic body. It is, therefore, quite impossible to state the date at which European Masons first foregathered in the East Indies. Calcutta commenced its history as a British Settlement with old Job Charnock's "midday halt," on the 24th August, 1690. On St. John's Day, December 27, 1728, the Grand Lodge granted a dispensation to open a new Lodge in Bengal, to George Pomfret who "first introduced Masonry into the English Settlement in India." A year later Captain Ralph Farwinter (or Far Winter) was appointed Provincial Grand Master "for East India in Bengal." The first Lodge founded in Calcutta which has a name known to history, was Lodge East India Arms, 1730. The first Lodge in Madras known to history was established in 1752 and became extinct in 1790: the appointment of a Provincial Grand Master for Madras goes back to 1767 (or perhaps 1768). On March 24th, 1758, the Grand Lodge issued a warrant for a Lodge at Bombay: and in 1764 James Tod (or Todd) was appointed first Provincial Grand Master. In 1813 the pioneer Bombay Lodge was erased from the list of lodges, and, but for the visit of travelling military lodges, Masonry seems to have been at a standstill until the formation of a Military Lodge *Benevolent* at Kaira in 1822. This lodge in 1824 removed to Poona, and, later on, to Bombay: it was erased in 1862. Between 1822 and 1840 no less than ten lodges were warranted in the Bombay Presidency, but of these one only, ***Orion in the West***, No. 415 E.C. (established in 1833), is in existence at the present day. The first District Grand Master of Burma was Col. A. J. Greenlaw, appointed in 1868, in the same year that Col. Charles McW. Mercer was appointed first Provincial Grand Master of the Punjab. The District Grand Lodge of the Punjab was formed by division from that of Bengal in 1866.

Early in 1838, a Provincial Grand Lodge under the Scottish Jurisdiction was constituted for the Western Provinces of British India. Dr. James (the Chevalier) Burnes was its first Grand Master, and his brother, Alexander Burnes, murdered at Kabul in 1842, was one of the Grand Wardens. Under the brilliant rule of James Burnes, Scottish Masonry was in the ascendant throughout Western India, and until 1848 English Masonry was practically in abeyance in the Bombay Presidency. It was not till 1861 that Rt. Wor. Bro. James Tod (appointed in 1764) was given a successor in Rt. Wor. Bro. George Taylor. Previous to 1848 Masonry under the Scotch Constitution had no footing in Calcutta. Travelling military lodges, with Irish—and sometimes with both Irish and English Constitutions—have wandered all through India: but in 1905, Wor. Bro. P. C. Dutt, "the first Hindu to be made a Master Mason," gave a permanent home to Irish Masonry in lodge *The Duke of Abercorn*, over which he ruled as first Worshipful Master. Wor. Bro. Dutt is also the first First Principal of a Calcutta Royal Arch Chapter under the Irish Constitution.

The roll of Anglo-Indian Masons is replete with historical names, The Marquess of Hastings, Governor-General of India, 1813—1823, held the unique appointment of "Acting Grand Master for all India." Lord Dalhousie, Governor-General, 1848—1856, was Patron of the Craft. Scotch Freemasonry in Bombay has enjoyed the strong and inspiring rule of a succession of its Gov-

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* Compare this with the following:—

		English Lodges.	Craft.
Prov. Grand Lodge	Kent		70
,,	Lancashire Eastern Divn.	,,	121
,,	,, Western ,,	,,	135
,,	Yorkshire West Riding	,,	85
,,	Cheshire	,,	66
,,	Devonshire	,,	56
,,	Essex	,,	62
,,	Hants and Isle of Wight	,,	51
,,	Sussex	,,	34
,,	Surrey	,,	49
,,	Transvaal	,,	37
,,	Queensland	,,	62

The P. G. L. of Oxfordshire has 12 lodges, Cambridgeshire 7, Cornwall 30, Gloucestershire 56, Shropshire 12, Nottingham 20, Malta 7, and Gibraltar 1.

The 1st Prov. G. Master of Bengal was appointed in 1728. The only older provincial appointments are South Wales (1726), North Wales (1726), Cheshire 1725.—*Masonic Calendar, 1906.*

ernors—Lords Sandhurst (also District Grand Master of the E.C.), Northcote, and Lamington. Among the Provincial Grand Masters of Madras we find the record of one who arrived in this country as a private soldier in the Company's Army, and who left it as Chief Justice of Bombay (Sir Herbert Compton); a career which can only be approached by that of John Blessington Roberts, who rose from the ranks of the police to the position of Chief Presidency Magistrate of Calcutta; from Tyler to District Grand Master of Bengal. Among the soldiers, we find the names of the Duke of Wellington, Gillespie, Grant Keir, Roberts, Lockhart, Kitchener, and Macdonald. In 1775 Lodge No. 3 of Madras initiated the eldest son of the then formidable Nawab of the Carnatic: in 1907 Lodge *Concordia*, in Calcutta, initiated the Amir of Afghanistan. Among the Governors of Madras will not be forgotten the name of one keen Mason, Lord Ampthill, who acted as Viceroy during the absence from India of Lord Curzon. The High Court of Calcutta has given as a ruler of the District of Bengal Sir H. T. Prinsep, and that of Allahabad gives Bengal its present District Grand Master, Sir W. R. Burkitt, who has succeeded Sir J. Digges La Touche, the late Lieutenant-Governor of the United Provinces, in this high office. The present Lieutenant-Governor of Bengal, Sir Andrew Fraser, rules over a Calcutta Lodge. The present District Grand Master of Bombay is the Chief Justice of the High Court of that city. It should not be forgotten that Holwell, the hero of the Black Hole tragedy, was a member of the Provincial Grand Lodge of Bengal.

MARQUESS OF HASTINGS.

To the student of Anglo-Indian history, the study of the old Masonic corporations must be of the deepest interest, for, the Christian Church apart, they are the oldest of European social institutions in India. The story of Lodge *Star in the East*, although broken, goes back to the year 1740: the story of another Calcutta lodge, *Humility with Fortitude*, No. 229 E. C., broken for only three years during the great Carnatic War, is that of a Calcutta society which for nearly one hundred years has, without a break, maintained a vigorous existence and spread its tenets and principles broadcast throughout the growing Empire. Lodge *Industry with Perseverance* No. 109, is *par excellence* the lodge of the men whose undertakings have proved to folks at home that the toils of the Indian Empire are, from a business point of view, well worth the while. It is surely most instructive to watch the foul days as well as the fair. When the Madras lodges are on their beam ends, it is because the struggle with the French for the mastery of India leaves little time for the *abstract* study of the squares or compass: when *Humility with Fortitude* cannot meet in 1784, it is because as a lodge attached to the Bengal Artillery, it has sent its good men and true to the great conflict which is to decide whether or no there is to be such a thing as British rule in India. When Masonry flags in Madras, disappears in Bombay, and in Calcutta is represented by what some, unmasonically, call "artisan lodges," it is because Napoleon has challenged the access of English ships to the Eastern Seas—and men's minds are full of anxieties, or distressed by actual ruin. Insurance freights run high for English cargoes, and cheap for those flourishing Danes at Serampore: no wonder there is but little time or money for social gathering. Throughout India, during the struggle with Napoleon, the "class lodges" fall into abeyance, while the humbler lodges, which have received their traditions from military lodges with an experience of Continental Masonry in Europe, survive, as adherents to the Ancient or Atholl Constitution.

In this place it is only possible to take what is called a "bird's-eye view." For the "worm's-eye view" the reader should study: C. H. Malden: *A History of Freemasonry on the Coast of Coromandel.* Madras, 1895. W. K. Firminger: *The Early History of Freemasonry in Bengal.* Calcutta 1906 (Thacker, Spink & Co.) Articles in the *Indian Freemason*, 1900-1907 by P. C. Dutt and I. M. Shields. For the story of the oldest Bengal Lodges see an article which appeared in *Ars Quatuor Coronatorum.* Vol. XVIII, 1905. The dates

accorded to the foundation of these lodges, either by the official Masonic Calendar or by the lodges themselves, cannot be relied upon. The records of the Provincial Grand Lodge of Bengal do not go back beyond 1860, although much of their contents are preserved in Firminger's *Early History of Freemasonry in Bengal.*

The following is a list of the eight oldest existing Indian Lodges.

1. *Star in the East,* 67, Calcutta.—Founded April 16th, 1740. First placed on the Engraved Lists of G. Lodge in 1750, when it took the place of the recently erased Lodge Three Tuns No. 185. In 1756 it appears as "the Third Lodge, Calcutta, in the East Indies." In 1773 it is "the First Lodge of Bengal." The Lodge was in abeyance for some time previous to 1785, and again from 1800 to 1812.
2. *Industry with Perseverance,* 109, Calcutta.—Founded February 7th, 1761. Appears in Engraved List in 1769 as "No 245 The Eighth, Lodge, Calcutta." This Lodge alone maintained its work during the Carnatic War, but was in abeyance from 1804 to 1812.
3. *Humility with Fortitude,* 229, Calcutta.—Founded in the Bengal Artillery, 1773. In abeyance 1781-1785. Seceded to the Atholl Constitution in 1798. Reunited in 1813. Continuous working since 1785.
4. *Perfect Unanimity,* 150, Madras.—The Masonic Calendar gives the year 1765 as that of the foundation of this Lodge, but this is probably mere guesswork. Malden shows that this Lodge was "the result of the union which took place in 1780 between the Atholl Provincial Grand Authorities under Col. Joseph Moorhouse and Brigadier-General Mathew Horne and his able Lieutenant Dr. Terence Gahagan." Lodge *Perfect Unanimity* can produce from its records an absolutely unbroken chain of evidence to show that from 1786 to the present date, there has been hardly a month without a regular meeting.
5. *Marine,* 232, *and Anchor and Hope,* 234, Calcutta.—It may be conjectured that these two lodges represent two stages of secession in a single lodge, from the "Regular" or "Modern" to the "Atholl" or "Ancient" Grand Lodge. In 1788 the 3rd Brigade of the Bengal Army came to Calcutta, bringing with them a Lodge said to have been constituted at Murshidabad, in 1773. When the Brigade left Calcutta, its civilian initiates petitioned to be warranted as a new lodge: this was done, and the lodge was named *St. George in the East.* Later on, finding their members were mainly seafaring men, the lodge changed its name to that of Lodge *The Anchor and Hope.* It was thus the Marine Lodge of the Anchor and Hope. In 1801 some of the members seceded and became the Atholl Lodge *Marine,* later on the remnant seceded and became the Atholl *Anchor and Hope. Marine* now works under a warrant of confirmation of its Atholl Warrant, while *Anchor and Hope* works under a warrant of confirmation of the Military Lodge, which was attached to the Third Brigade. *Marine* has had two short periods of suspended working: *Anchor and Hope* a lengthy one. The latter lodge is to-day composed of natives.
7. *True Friendship,* 218, Calcutta.—The Military Lodge, whose visits led to the foundation of *The Anchor and Hope* in 1788, was No. 12 of Bengal and was probably founded in 1778, but into its hands had come a Warrant of the Tenth Lodge of Bengal at Murshidabad. The Third Brigade returned to Calcutta in 1793, and brought its lodge with it. The lodge, however, became extinct in 1798 "by the dispersion of its members." In 1798 a new *True Friendship* was warranted by the Atholl Grand Lodge, and, from that day to this, has worked continuously.
8. *Universal Charity,* 273.—The *Masonic Calendar* gives 1789 as the date of foundation. The Lodge was founded in 1811 as an offshoot of the Carnatic Military Lodge, but it was fortunate in obtaining the Warrant of Lodge *Strength and Beauty,* which had perished in the Vellore Mutiny. The Lodge was in abeyance from 1830 to 1845.
9. *Rock,* 260, Trichinopoly.—The *Masonic Calendar* gives 1786 as the date of foundation. The Lodge was locally warranted on December 27th, 1816, but in 1820 was given the precedence and antiquity of an older lodge, which had become extinct.

In the above table some reference has been made to the division of Masons into "Atholls" or "Ancients" and "Regulars" or "Moderns." It would not be in place, in an article on Masonry in India, to discuss historical questions which belong to the universal history of the Craft, but a word or two of explanation is necessary to render what has been said intelligible to the reader. Mr. Saddler, the librarian of the United Grand Lodge of England, writes on this subject:—"The Atholls were Irish Masons, who, in consequence of the doors of the English Lodges being closed against them, had assembled in Lodges of their own formation, perfectly independent of any authority but that of their own selection, until they felt themselves strong enough, and circumstances being favourable, to organize a Grand Lodge, which they did on the 27th December 1753, having regularly assembled as a governing body under the denomination of a Grand Committee since the 17th July, 1751." A marked feature of Atholl Masonry was its patronage of the "higher degrees," and when, in 1813, the rival Grand Lodges united, the definite recognition of the Royal Arch degree, as the completion of the Master Mason's degree, represented the triumph of the Atholl ideal. From the year 1801 to the year 1812, Masonry in Calcutta was either Atholl or nil, and although the Masons in Madras by their re-union antici-

pated the re-union of the two English Grand Lodges by twenty-eight years, they continued, despite their allegiance to the regular Grand Lodge, to "work Atholl."

In India the Craft has had to face the problem of the legitimacy of the admission of non-Christians to the craft degrees. It would be understating the facts to say that Masonry is essentially monotheistic. Masonry is also committed to the belief that there is such a thing as "a Volume of the Sacred Law," and that this volume contains a unique revelation of the Almighty. In accordance with the English love of vesting moral responsibility in the man who enters upon obligations, rather than in the obligator, British-Indian Masonry has in the purely Craft degrees opened wide its threshhold. From the religious point of view, the man who becomes a Mason commits himself to Masonry, and not Masonry to its initiates. If, for instance, Hinduism is inconsistent with Masonry, it remains for the Hindu to ask himself how far in becoming a Mason he has, or has not, definitely adopted a new moral and intellectual position. Masons do not merely believe in *a* god; but in *the* God; and the very first step in Masonry is a tacit profession of belief and moral observance to Him alone who has inspired, not many sacred laws, but a Unique Volume.

In Bombay the Craft has for some time past rejoiced in the possession of a fine Masonic Hall. In Calcutta the brethren of the mystic tie have at last carried out a design, which for nearly one hundred years has been under contemplation; but the ideal temple has yet to be built to grace the City of Palaces.

Irrigation.

Introductory.

There are very few countries in the world where the natural supply of water, whether by rainfall or by the overflow of rivers, is sufficient or regular enough to enable crops to be raised to the best advantage, and where, therefore, irrigation is not practised to supplement Nature. In most tropical countries this is especially the case, and India, as will be seen, owing to the diversity of climates and conditions, offers a field for every variety of artificial expedients both for regulating and for supplementing the moisture drawn up from the sea and deposited on the land. These artificial aids can there be studied both in the crudest forms, through all their stages, up to the latest devices of engineering talent and experience.

The water required is either raised from out of channels, streams and rivers, or is led on to the lower lying lands by tapping or damming waterways whether perennial, as in rivers, or temporary, as in watersheds.

The modes of raising water for irrigation purposes in India are as follows:—The basket scoop whereby two (and sometimes four) men can raise water up to four feet at the outside. The scoop is a shallow four-cornered article, to the corners of which ropes are attached; by a swinging motion the men at the corners dip it into the lower water and deliver its contents into the higher channel. Like all indigenous methods this involves a great waste of energy, as a large proportion of the water falls out of the scoop during the process of raising. By these means it is estimated that about 2,000 feet of water can be raised one foot in an hour, at the outside, at a cost of 7 annas per acre of crop.

With the "doon" water can be raised 3 feet. This is used in Bengal, and is a trough fixed in the centre, about which it oscillates. It is worked by a man, standing on a platform in the stream, by means of a long horizontal pole, pivoting on a standard, the long or water end of which is attached to the trough by a rope, and the short end of which has a weight attached sufficiently heavy to pull up the trough and its contents; the cost per acre of crop is estimated at about 12½ annas with a 3-foot lift.

The "lat" as it is called in Upper India ("picottah" being its name in the South) is similar to the well-known "shaloof" of Egypt, and is worked like the "doon;" but a bucket takes the place of the trough and the man working it stands on the edge of a high bank and pulls the bucket down; swinging it inland when it has been raised by the counterbalance weight on the short or land end of the long pole. A plank is sometimes substituted for the pole on which the worker stands, as on a see-saw. Two men are sometimes employed on this contrivance and the maximum lift is 15 feet, at which two men will lift 5,760 feet in an hour and one man 3,300 cubic feet, at an estimated cost of Rs. 13 per acre of crop.

A "moth" is worked by animal power. This is a leather bag holding from 30 to 40 gallons, attached to one end of a long rope which is led over a pulley, and to the other end of which the draught animals are yoked. They pull up the bag by walking down an incline. When they reach the bottom of this and the bag reaches the top of the well in which it works, the driver unhitches the rope, while another man empties the bag into the distributing channel—the weight of the empty bag drags the rope up this incline. In some cases the animals walk backwards with the rope, and the bag discharges itself by a simple automatic device. Sometimes two "moths" are used in one well. Two bullocks and one man will thus raise 7,920 cubic feet an hour from a depth of 15 feet and at a cost of Rs. 9 per acre of crop. "Moths" are sometimes used at much greater depths, but the next device is generally put up for this work.

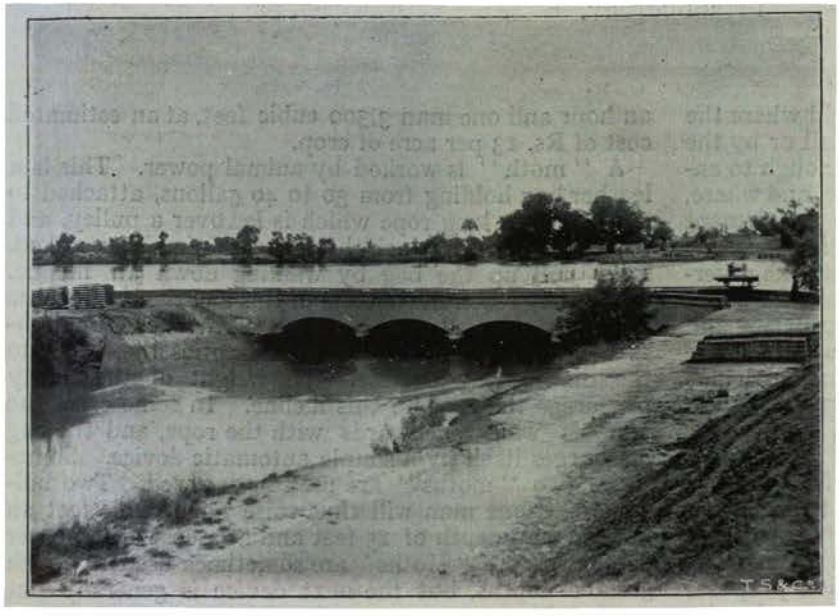
The Persian wheel or "noriah" is composed of an endless band to which water pots are attached. The lower loop dips into the water in the well, the upper loop goes round a large wooden pulley, which is revolved by rough gearing, also of wood, worked by animals walking round in a circle. As the full pots come down over the pulley, they discharge into a trough leading to the distributing channel. All this wooden apparatus, which is seldom if ever greased, creaks fearfully. To this noise the owner does not object as it informs him whether the wheel is working, for the boy driver, who sits at the end of the beam to which the draught animals are yoked, is very apt to drop off to sleep, and no wonder, whereupon the bullocks or camel, as the case may be, also take a rest.

These wheels are used over wells generally 40 feet deep, but sometimes as much as 60 feet in depth, and also with two chains of buckets. A single wheel is estimated to raise about 69 cubic feet of water per hour from a depth of 50 feet and a double wheel 190 cubic feet at less cost than a double "moth." Improved "noriahs" and even some oil-driven and wind-driven pumps have been put up in places, but they cannot be said to have taken on. In many instances the working of wells by animal power costs the owner little or nothing as he employs his animals at this work when there is nothing else for them to do.

The average cost of irrigation by the above means is put down at Rs. 3-8 per acre of crop in India as a whole, exclusive of the expenditure on well-sinking.

Wells are divided into three classes:—First, *kutcha* or unlined; these last from one to two years and, when the sides fall in, a new one is dug; the depth varies

according to the soil, and they are only large enough for one man to work in, the appliances for lowering the sinker and for raising the earth are of the rudest, and the chant of the digger when a big hoeful has to be raised is very weird, especially as it appears to come from the bowels of the earth. These *kutcha* wells cost but a few rupees and serve a small extent of ground. Second, *kutcha-pucka* wells are made larger and are lined either with wattles, brushwood, or bricks and stones in mud mortar. Third, *pucka* wells are lined with brick or stone-work in lime mortar; these cost an average from 300 to 600 rupees and irrigate from 2 to as much as 20 acres. Sometimes these *pucka* wells are very large indeed—as for instance—the celebrated one at the Kootub near Agra—from the water level of which a ramp or incline reaches up to the surface for the watering of cattle, etc., and they can hardly be classed among irrigation works though sometimes used as such. All these works are mostly due to private enterprise. There is no doubt that the experience gained in well-sinking under varying conditions, all over India, proved of the greatest assistance to the designers and constructors of the various modern works of art which have been erected since the land fell under British rule, and of which wells and other cylinders form so large a part.



SIDHNAI WEIR, RIVER RAVI, FROM THE KORANGA CANAL HEAD.

Other modes of irrigation practised from time immemorial in India can also be grouped into three classes, *viz.*, First, reservoirs, natural or impounded. Second, Perennial watercourses and canals, and, Third, those called "Inundation" canals that only work while streams are in flood, in which class the overflow from rivers may also be placed. Petty canals are still constructed and maintained by private enterprise to a considerable extent; they are sometimes assisted by local funds. No less than 800,000 acres are irrigated from hill streams and *jhils*.

RESERVOIRS AND TANKS.

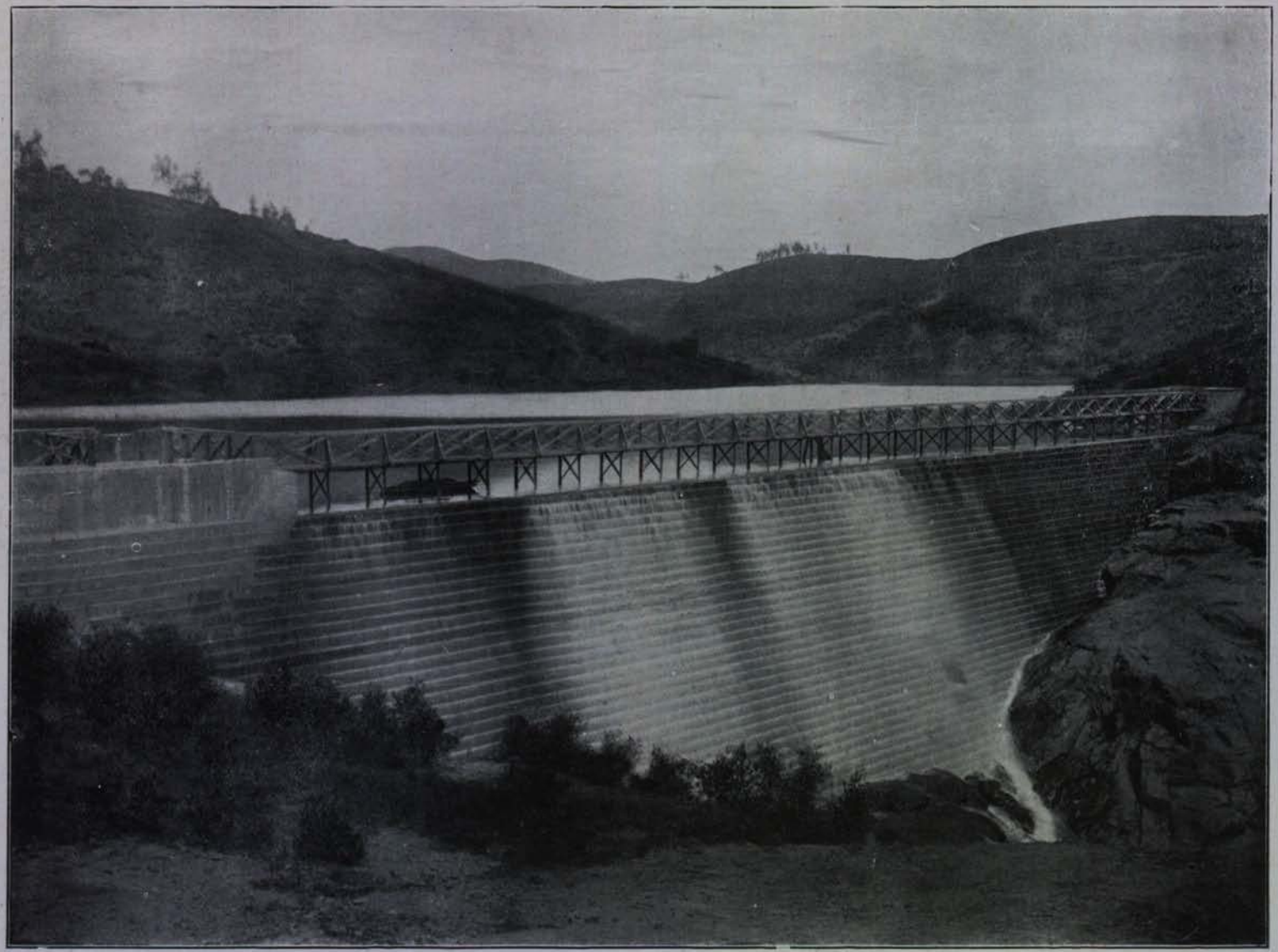
Natural reservoirs or *jhils* are formed in low lands during the rains and are found in the beds of rivers in the dry season, where they are used to raise crops on the *churs* or islands left by the receding water. It is in these places that the simplest lifts are found so useful. Tanks and reservoirs suffer greatly from evaporation and from loss of water by absorption and leakage.

PERENNIAL CANALS.

In comparatively narrow valleys tanks were formed by throwing *bunds* or banks across them at intervals; "anicuts" or weirs were also thrown across rivers and streams, ranging from the smallest hill streams to some of the largest deltaic rivers, serving mostly class two or perennial watercourses. In the hills the water was led along terraces formed all over the hill sides, and in the plains the impounded water was led along artificial watercourses and canals. As these latter, however, were not scientifically designed, they were costly to maintain either by reason of the erosion of their banks or by the silting up of the beds.

This class of work cannot be considered successful unless the weir or anicut impounds sufficient water for irrigating purposes even in the driest seasons and when the feeder streams are at their lowest.

SIDHNAI WEIR, RIVER RAVI, NEEDLES REMOVED.



DAM, CORDITE FACTORY POWER PLANT, NILGIRIS.

Inundation Canals.

These were constructed with a similar want of technical knowledge and suffered from the same defects as the old so-called perennial works. This class of canal depends entirely for its supply of water on the feeder river or stream rising to a height sufficient to serve it efficiently. The inlets from the feeders are often partly choked with several feet of silt during the floods and the water ceases to flow at a higher level. Cultivators have to adapt themselves to the seasons when the canals are at work and generally have no difficulty in doing this. As for the natural overflow from rivers, this has been one of the most difficult problems and one which even to this day has not been satisfactorily solved.

The revenue received by the State from irrigation works depends on the amount of water supplied; on the kind of crops; on the area actually or ordinarily cultivated. When the land revenue was taken in kind, the State's share increased with the irrigation and therefore, rulers and farmers of land constructed or helped to construct irrigation works. Under British rule payments are made in cash and assessments are fixed with reference to average produce, irrigated lands ("wet") being assessed higher than the others. The difference between the "wet" and the "dry" rate represents the true revenue due to irrigation works. The charge for irrigation averages about 11 per cent. of the crop value and the average working expenses per acre are Re. 1-1.

General.

The statistics given are for the year 1904-05 (the latest available) and up to March 31st, 1905, they are taken from the *Review of Irrigation* by L. M. Jacob, Esq., C.S.I., Secretary to the Government of India for Irrigation, Roads and Buildings, and from the "Note" by R. N. Burn, Esq., Accountant-General, Public Works Department.

The average rainfall in India is 42 inches a year, and only one-fifth of the crops grown are irrigated, covering 44 million acres. Of these, 30 per cent. are served by wells and yield one-third of the total outturn.

The State encourages all these private enterprises by loans and by liberal assessments. It also maintains many of the works which were formally constructed by native chiefs and which were fast disappearing. Irrigation by wells being comparatively costly, it cannot be forced on the cultivators and the encouragement takes the forms of *takavi* or temporary exemption from land revenue, bearing 6¼ per cent. interest in general, or where it is less, repayment is made by instalments ranging from 7 to 30 years. For instance, in the ten years ended 1901, Government had advanced Rs. 348 lakhs in the form of loans and Rs. 277 lakhs for specific improvements. Ryots who dig wells and make other improvements are exempted from enhanced assessments for specific periods, long enough to enable the ryots to recoup themselves for their capital outlay.

Minor Revenue Works.

The works taken over as mentioned above are included in the so-called "Minor" works for which separate capital accounts are not kept, either because the works are too small, or because they have not been constructed by the British Government, which has simply undertaken their improvement and maintenance. For such works only revenue accounts are maintained as the cost of their construction cannot now be ascertained; they are credited with a share of the land revenue depending on their maintenance, and are debited with all expenditure incurred on construction, extension, improvement, and maintenance. The area irrigated by these was 2,075,135 acres in 1904-05. The revenue receipts were over a crore of rupees, and the charges amounted to nearly Rs. 71 lakhs: the net receipts being Rs. 37,39,786 or nearly 35 per cent. of the gross receipts. The total gain to end of 1904-05 (including indirect charges) was over 8½ crores of rupees.

Another similar class of works are some 28,000 tanks and 6,000 irrigation channels, the improvements and repairs of which are executed by the Public Works Department, or, in the case of smaller works, by civil officers. The expenditure during 1904-05 amounted to over Rs. 27 lakhs, of which about one-fifth was spent by the civil officers. The areas charged as irrigated by these small works aggregate about 3 million acres. The revenue derived therefrom varies considerably according to the character of the season, whether favourable, or otherwise; for instance, in 1903-04, it was over Rs. 75 and in 1905-06 under Rs. 65 lakhs.

This includes the description of works constructed mainly by native agency and now maintained by the Government.

The so-called Major and Minor works are those for which capital and revenue accounts are kept and are divided into three classes. *1st*, Major Productive works. *2nd*, Major Protective works; and *3rd*, Minor (or Minor Capital) works. The most important irrigation works in India are those classed as Productive works, or works the capital cost of which has been wholly or mainly provided from loan funds, in the expectation that they would prove directly remunerative, and that the net revenue derived from them would fully cover all charges for interest within a reasonable time after their completion.

Major Productive Works.

There are 41 of these irrigating about 12,617,000 acres; this area is gradually increasing except where hereafter noted. The total outlay on these to 1904-05 was close on 39 crores, exclusive of Rs. 10,92,150 on account of outlay on surveys and in investigations of Irrigation Projects and on special Establishments employed on the preparation of famine relief programme. The percentage of net revenue on capital outlay was 7·60 per cent. in the same year, being the highest on record after a steady advance for many years, which advance is sure to continue. The total net revenue on these, from their inception to 31st March, 1905, was over 17¾ crores of rupees, and this exceeded the accumulated interest by over 14¼ crores of rupees. The revenue due to them is given whether received directly in the form of water rates and miscellaneous receipts, or indirectly on account of enhancements of land revenue due to irrigation.

Major Protective works are those which have been sanctioned in consideration of their value as famine protective works, but without any expectation of their becoming directly remunerative. The cost of their construction has been met from the Famine Grant.

There are at present six of these works in operation irrigating nearly 434,000 acres. The total capital outlay on these to 1904-05 was over 2¼ crores. The area irrigated has gradually increased during the last nine years.

The total direct loss on these works to 31st March 1905 was Rs. 2,32,60,953.

Minor Capital Works.

The third class are the so-called Minor works for which Capital and Revenue accounts are kept, and all expenditure incurred on them, both in construction and in development, is met from revenue. Of the larger or more important works there are 81, including those under construction, irrigating nearly 2 million acres, on which the capital outlay to the end of 1904-05 had been over Rs. 386¼ lakhs. The net revenue in the same year yielded 7·27 per cent. on the capital outlay, and the rate of revenue assessed per acre was Rs. 2·8 or

Sidhnai Weir, River Ravi, Needles in position.

The area irrigated by the last two classes of works is, therefore, well over 13 million acres, or 20,400 square miles, or 21 crore bighas. The estimated value of the crops was over 36½ crores, the average value of the crops per acre was Rs. 28 or about 37⅓*s.*; the average rate of revenue assessed per acre was Rs. 3·6 or 57½*d.*; the working expenses rate per acre irrigated were Rs. 1·2 or 19·2*d.*, and the percentage of working expenses on gross revenue was 31½.

44·8*d.*; on the smaller works the capital outlay during 1904-05 was nearly Rs. 17,40,000. The total gain up to 31st March, 1905, was Rs. 2,20,03,115.

Summarising the above data, the capital outlay to end of 1904-05 on the three last named classes was Rs. 47,25,78,389 or £31,505,226, the net revenue during the year amounting to 7·01 per cent. of the capital outlay expended on them. Under these circumstances it seems most extraordinary that the sums allocated to this work should depend in any way on the other

commitments of the Government, or that there should be any difficulty whatever in raising sufficient sums at all times for such remunerative work, yielding such splendid results in the way of increased cultivation.

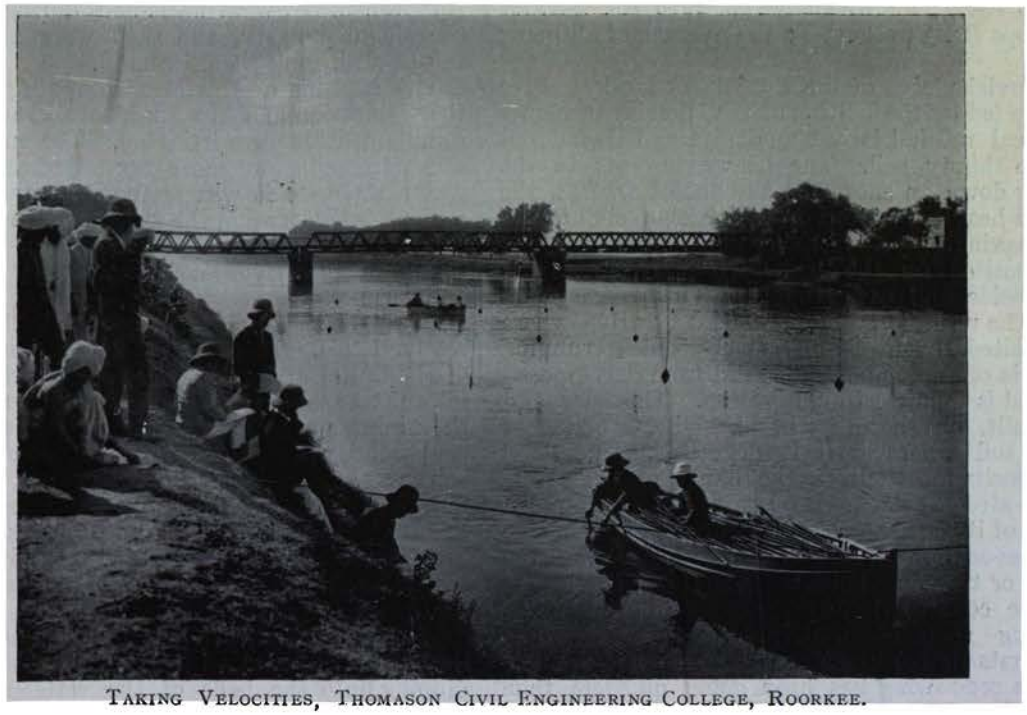
The total area irrigated by all the works in 1904-05 amounted to 20,107,510 acres, or over 322 lakhs bigahs or 31,418 square miles (rather more than the area of all Scotland); the total length of waterways, including distributaries, being 42,376 for the first three classes of work; the net revenue of which was Rs. 39,342,927 or £2,622,862. Of course it is no good growing more food stuff than can be consumed on the spot unless a profitable market can be found for the surplus. It was at one time considered that water carriage would solve the problem; but it was soon found that, with very few exceptions, navigable canals could not be constructed to any advantage, owing to the necessary speed of the current to prevent silt and also to the actual cost of transportation; and, as in England and elsewhere, it was soon discovered that except under exceptional circumstances nothing could compete with effective carriage by railway. Further, as railways were also found to be profitable investments, even without allowing them to charge the minimum paying rates which would add so enormously to their earning power, there was no reason in the world, except the financial policy of the Government, why irrigation works and railways should not have been executed as fast as labour could be found for them and materials could be procured.

Even as it is, and in spite of the want of sufficient feeder roads and a continued and continuing shortage of rolling stock, the combination of irrigation and railways has so far advanced that no famine need now occur in India, for want of food stuffs at reasonable prices; the only difficulty being that in bad years, the cultivators on non-irrigable lands do not possess sufficient money to pay for food, however moderate in price it may be. Hence the need for relief works, whereby they may earn sufficient to tide them over the bad times.

For many years past the gross water rates have increased considerably, while the cost of revenue management and the working expenses has decreased, with a material increase in the net revenue, which increase there is every reason to believe will continue. As it is, the water costs the people one-third of the increased value of their crops in ordinary years.

Again, famines have been estimated to increase the death-rate by 40 per cent. The 1876-78 famine is stated to have cost over 16,79 lakhs.

The duties of Engineers of the Irrigation Branch of the Public Works Department are many and varied; they are responsible for the proper assessment of the Irrigation Revenues; for the collection of other revenue earned by the canals; for repairs; for suggesting improvements; for the regulation and distribution of canal water; and, in some provinces, for all public works except railways; all this in addition to the designing and construction of all new works whether in the shape of additions or reconstructions.



TAKING VELOCITIES, THOMASON CIVIL ENGINEERING COLLEGE, ROORKEE.

The pay of officials is not princely:—the Patrol receives from Rs. 5 to Rs. 10, and deal with from 1,500 to 3,000 acres; the Ameens get from Rs. 10 to Rs. 25, for 7,000 to 10,000 acres; the Zilladars, for from Rs. 50 to Rs. 100, overlook from 30,000 to 54,000 acres, and Deputy Collectors, with from Rs. 200 to Rs. 300, have 80,000 to 120,000 acres under their charge.

Irrigation accounts are kept separately for the following provinces, *viz.:* Punjab, United Provinces of Agra and Oudh, Madras, Bombay, Sind, Bombay, Deccan and Gujerat, Bengal, Burma, and the Native States in the Punjab, which will now be noticed in that order.

PUNJAB.

In the Punjab there are 8 Productive works irrigating 5,281,831 acres with a mileage of 12,201, the capital cost of which has been Rs. 10,87,88,346,* yielding net revenue of 12·29 per cent., the total net revenue having been Rs. 8,71,93,900. The water charge is distinct from the land revenue assessment and is levied as a water rate on occupiers; this varies with the crops grown and is chargeable only on fields actually watered. This is subject to revision, of which the Government may take a share and, under the Northern India Canal and Drainage Act, 1873, it may, during the currency of a settlement, impose, in addition to the occupier's rate, an owner's rate on lands brought under irrigation after the settlement was made; provided such rate does not exceed half the increase in rental value of the land due to irrigation. The maximum sugarcane rate is Rs. 8-8; of rice from Rs. 3-4 to Rs. 7; for wheat Rs. 3-12 to Rs. 4-4; for fodder crops Rs. 3 to Rs. 3-8; the average of all being Rs. 3-4.

The alluvial plains of the Punjab, or land of Five Rivers, are fed by the melting of the Himalayan snows, for the local rainfall is but moderate and is sucked up by the thirsty soil. The heavy torrents in the hills bring down an enormous amount of *detritus*, the larger and heavier portions of which soon sink to the bottom, leaving only the smaller and lighter particles to be deposited on the beds of the rivers as the waters subside, and over the land during the flood season. The nature of the silt varies greatly—where it is deposited by a comparatively quick running stream, it is often composed of sand from decomposed granite and is inimical to cultivation. The finer and soil-land silt, on the other hand, giving a new coat of fertile soil wherever it is deposited. The flood water deposits most silt on the banks of the rivers where the stream slackens by reason of the sudden expansion of its outlet. The consequence is that the whole cross-section of the river rises leaving the "Doab," or two-river-lands between them, the lowest part of the country they traverse. What follows is, that during some abnormally high flood the main stream bursts its banks and seeks an older and lower bed. This see-sawing has been going on from time immemorial and accounts for the gradual raising of all alluvial plains similarly situated.

The land on the high banks along the rivers is called "Bhangar," that in the low lands between them, from 10 to 50 feet below, is called "Khadir." The main canals and distributaries generally lie along the ridges, and the distributaries on minor watersheds. The canals, being laid out with a smaller bed slope than the rivers, conduct the water out of the valley at the intake on to the higher lands further down, and at times right over one watershed into an adjoining one.

The Western Jumna Canal serves both Imperial and a small part of Patiala State lands, much of the land is salt or *reh*, due in some measure to over-irrigation. This might be avoided by educating the cultivators, or, as the stretches are comparatively few and small, the canals can be taken across them. The utility of the Jumna for irrigation was recognised many centuries ago. In 1350 Firoz Shah Tuglak tapped the right or western bank and constructed a canal 150 miles in length leading to his lands in Hissar. In course of time it silted up. Akbar re-opened it and during Shah Jehan's reign a branch was opened to Delhi. But the works were neglected during the decline of the Mogul dynasty, and they were abandoned until the English took them in hand.

The Marquis of Hastings, from 1814 to 1823, began the restoration of Firoz Shah's work, and by 1870 half a million acres were irrigated. The supply, however, was uncertain, and moreover adjacent lands became waterlogged, so it was remodelled and re-aligned to a great extent, and in the famine year 1897-98 the area irrigated amounted to 764,000 acres. On this canal there are some river level crossings by means of inlets and escapes.

The Sirhind Canal also serves both Imperial and Native lands. This canal takes off from the left bank of the Sutlej at Rupar, which lies at the foot of the Siwaliks or lower hills of the Himalayan range, where the minimum discharge of the river is 2,800 cubic feet per second, the maximum being 6,000 cubic feet. The work was first proposed by Sir William Baker in 1841; but the first estimate was not sanctioned until 1870. Lord Ripon let the water in 12 years later in 1882. The Scinde, Punjab and Delhi Railway laid a branch to serve during the later part of the construction and continued it past the head works to a stone quarry some miles beyond. In crossing the numerous streams the line was carried on so-called "Irish" causeways dipping into the beds of the watercourses. It was here also that some of the anomalies attaching to Government departmental work were exemplified. At Rupar there was a small boat yard, as it was intended to navigate the canal, and this was in charge of a British stonemason; the quarry beyond it

Canals.	Western Jumna Imperial.	Sirhind Imperial.	Bari Doab.	Lower Chenab.	Upper Sutlej including Lower Sohag and Para.	Sidhnai.	Lower Jhelum.	Indus Irrigation.
Acres Irrigated ...	700,335	813,454	955,741	1,945,675	213,997	164,589	305,900	182,140
Capital Cost Rs. ...	1,72,75,463	2,48,37,227	1,98,23,305	98,712	27,20,734	39,967	3,15,439	39,183
Percentage of Net Revenues ..	10·07	6·86	12·13	24·48	10·37	25·88	Loss Rs. 5,33,409	10·04
Miles in operation ...	1,905	3,011	1,963	2,806	718	199	796	743
Total net Revenue ...	3,98,85,197	12,93,908	208,70,393	2,43,80,212	7,33,410	12,93,908	21,32,528	1,09,823

* To which have to be added the Upper Chenab Rs. 32,823 and the Upper Jhelum Rs. 14,563.

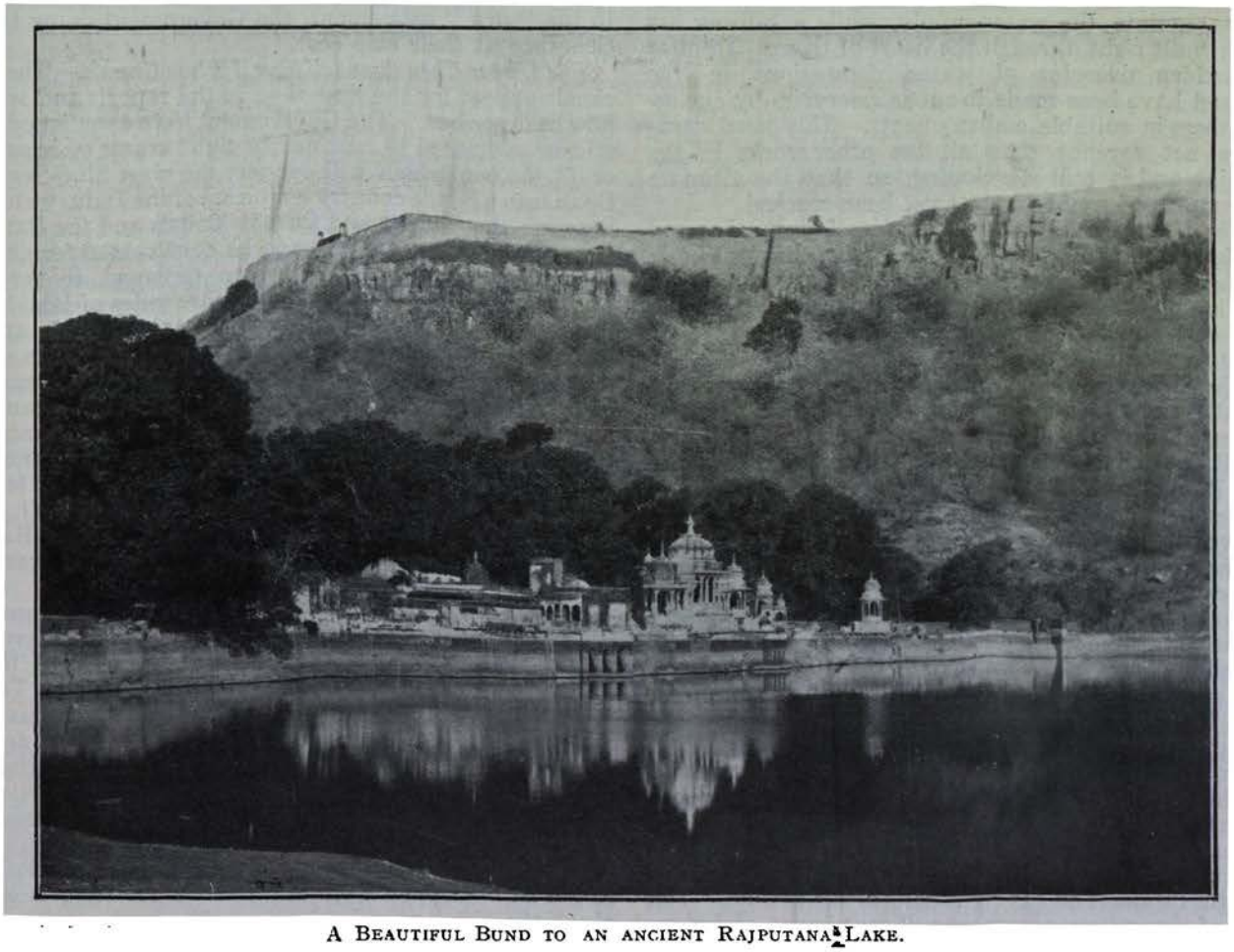
Masonry Weir across River Arh.—Connaught Tank Headworks, Rajputana.

was in charge of a Danish shipwright. The flow in this canal is now sufficiently fast to automatically prevent the deposit of coarse sand. In the first 57,000 feet of the canal the deposit amounted to 20,253,000 cubic feet in 1893; in 1904 it was only 1,422,000 cubic feet. The Sugh and Budki torrents are carried over this canal at a height of 24 feet. The aqueduct is designed to carry 30,000 cubic feet per second; it is 400 feet wide with a depth of from 8·4 feet to 8·34 feet.

More than one-third of the cost was contributed by the Phulkian States:—Patiala, Nabha and Jhind; in consideration of this they are entitled to the same proportion of the supply. The water serves large areas in those States, and also in Faridkot and in the Ludhiana and Firozpur districts. In these States the ordinary irrigated area is two million acres, three-quarters of which is by the above two canals.

The Bari Doab Canal.—The silt here is very sandy. The Hasli Canal was constructed by native chiefs in former times to serve Lahore and Amritsar with water from the Ravi, and the Bari Doab takes off very near the same place, at Madhopur on the right bank of this river, close to the foot of the hills where it has a discharge of 1,200 c. feet per second. Here a weir diverts the water into a canal having a capacity of 45,000 c. feet per second, serving Gurdaspur as well as the above mentioned important towns. It was begun after the annexation of the provinces in 1850 and was originally opened in 1861; it has been greatly enlarged and extended since then. In the central portion, between the Ravi and the Sutlej, it is evident that there was high cultivation, which ceased after the Beas was diverted into the Sutlej in 1790, instead of running an independent course into the Chenab.

The Lower Chenab Canal.—The ordinary discharge of the canal is six times that of the Thames at Teddington. It lies between the Ravi and the Chenab Rivers, and is the largest of all canals in India at the present time. It was originally an inundation canal opened in 1887, which ran the risk common to all such canals of silting up. In 1889, work having been started in 1884, it was converted into an irrigation canal of the first magnitude. The weir head works are at Khanki 8 miles below Wazirabad, and were completed in 1892, since which there have been constant enlargements and extensions so that it now serves the greater part of the Rechna Doab, nearly all Crown land in the Gujranwala, Jhang, and Montgomery districts, and commands 2,645,000 acres or over 4,134 square miles of culturable land which was formerly an uninhabited howling desert. (The cultivable area of Egypt is 3,000,000 acres.) It



A BEAUTIFUL BUND TO AN ANCIENT RAJPUTANA LAKE.

has already attracted a new population of one million from congested districts. The weir has 4,000 feet of waterway and is divided into 8 lengths of about 500 feet by piers 10 feet wide. Iron shutters 8 feet high are erected on the crest; these are put up as the floods subside and are dropped from the piers by let-go gear as the waters rise. The take-off of the canal is just above the weir, it has a maximum depth of about 11 feet, is 250 feet wide at the base, and is capable of discharging 10,800 c. feet per second. All the Crown lands are parcelled off into 1,100 feet squares with numbered boundary pillars which served as guide posts to the officers when all was jungle. These plots have been carefully levelled and have a network of telegraphs for the men who regulate the water-supply, while a railway has been built right through the heart of them. To meet a sudden overplus of water, depressions in the ground have been made to act as reservoirs by enclosing them in suitable embankments. This canal earns more net revenue than all the other works in the Punjab and is still developing, so that the ultimate percentage of profit has not yet been reached.

The Upper Sutlej Canals, including Lower Sohag and Para. They are inundation canals from the right bank of the Sutlej and there is no weir at the intake. A portion of the Montgomery district is served by them. The new population first began to settle here successfully in 1892-93.

The Sidhnai Canal earned the highest net revenue of all, and the average cost of the work per acre irrigated was the lowest in India, *viz.*, Rs. 2. This small but remarkable canal takes off above the weir on the Ravi, north of the junction with the Chenab and serves part of the Multan district. The first settlers arrived in 1892-93.

The Lower Jhelum Canal though begun in 1901, is not yet completed, and the loss in working, exclusive of interest, fell from Rs. 1,12,030 in 1901-02 to Rs. 19,435 in the next three years. This canal will eventually serve 1½ million acres in the Jech Doab, which was and is still, in a great measure, an arid tract between the Chenab and Jhelum, a Crown waste in the Shahpur district; and it is estimated to cost, when completed, no less than Rs. 1,81,89 849. In January 1899 the staff first arrived on the job; and the head works were begun in October of that year; the weir was completed in May and the water diverted over it in December 1901. The head works are near Rasul, where Chilianwala was fought, and the intake is on the right bank of the Jhelum. The cost of revenue management per each rupee of Irrigation Revenue were the highest in India, *viz.*, Re. 1·07.

The Indus Inundation Canals.—The Indus has gradually worked its way from east to west—indeed this is the general tendency of rivers running north and south in India, and may perhaps be due to the rotation of the earth in the other direction. From Sukkur to the sea, some 300 miles, the banks are permanent only at Sukkur, Jhirk and Kotri. The river begins to rise with the melting of the snows in April and May to the middle of August. The water then falls rapidly for six weeks and more slowly afterwards. When the water is 12 feet at Bhukkur (in the Sukkur gorge) it begins to flow into the canals sufficiently to moisten the land for ploughing; if not, the beasts have to be employed in raising water. The depth of some of the canals is 15 feet and the velocity is from 1 to 3 feet per second; sufficient to prevent silt while not eroding the banks.

In the Inundation Canals taken over, the land revenue was fixed with reference to water advantages, and people were required to clear out or to contribute to the annual clearance of the canals. In some districts each owner had to send a number of coolies proportionate to his land irrigated in the previous season; this was called *chher;* in others, the owners were charged rateably a fixed clearance rate of about half the estimated average cost of clearance. At the last resettlement of this district it was decided to impose an occupier's rate in addition to the "dry" assessment, the Government doing the clearance at their own cost.

The Upper Chenab and Upper Jhelum Canals.—These canals appear for the first time in the reports and will now be described. The Government have sanctioned a scheme estimated to cost nearly eight crores of rupees or £5,300,000 which will convert the vast Sind-Sagar Doab into a fertile country by the use of the Indus water. Between the Jhelum and Chenab Canals and the Bari-Doab Canal three canals are to be constructed forming one great scheme. These are designed to serve 1,876,000 acres or nearly 3,000 square miles of land by means of 3,218 miles of waterway, main, branch and distributing. By these means a gross revenue of Rs. 96 lakhs is anticipated or £640,000 yielding a net revenue of 10 per cent. for irrigation alone. The largest canal will beat the record in India as it will have a discharge of nearly 12,000 c. feet per second from a channel 270 feet broad and 11 feet deep with a velocity of 4½ feet per second. The three main canals are called No. 1 Upper Jhelum, No. 2 Upper Chenab, No. 3 Lower Bari Doab, and will irrigate three totally separate tracts of land.

Canal No. 1 will lie between the Jhelum and Chenab Rivers from where they emerge out of the Himalayan range. The southern portions of this tract called the Upper Jech Doab has been subject to famine. The canal will take off from the Jhelum River which has a cold weather discharge of from 6,000 to 10,000 c. feet per second. One canal already takes off from this river but enough is left for this second one; a great portion of this supply will, moreover, be passed on through this canal to the Chenab river.

Canal No. 2 will lie between the Chenab and Ravi Rivers in the Upper Rechna. In this district an old canal, the *Kitri*, 50 miles long, used to feed a tank at Shekopur. In this Doab there is a riverain tract on the south-east which is subject to droughts and is greatly in need of irrigation. The Chenab River already feeds the great Chenab Canal and little, if any, is left to spare; so the necessary amount will be drawn from the Jhelum surplus and be delivered a little above the head of this last mentioned canal.

Canal No. 3.—The land called the Lower Bari Doab which will be served by this work is now mostly jungle—a grazing ground for camels—and nearly a million acres of waste ground will be turned into a fertile plain at the magic touch of water; it is in the Montgomery district east of the Ravi. The supply for this canal will be drawn from the Chenab River 40 miles above where

No. 2 debouches; it should come from the Ravi, but the old Bari Doab Canal absorbs most of the supply from this river, so a portion of Canal No. 2 will be carried under the Ravi by a syphon and will deliver the water into the waste lands of the Lower Bari Doab. This great syphon will carry 6,500 c. feet per second under a river having a flood discharge of 200,000 c. feet per second; it will be a quarter of a mile long.

The minimum height above the soffit at low water will be 27 feet. There are eight vent barrels 11½ feet by 10 feet, carrying 6,500 c. feet per second under the Ravi which, when in flood, dicharges 200,000 c. feet per second. There is an invert over the whole work enclosed in iron straps; it is 1,400 feet long between the drop walls, and there is a drop of 4 feet through the syphon.

Another work now being studied is the New Swat River Canal, involving two tunnels under the Malakand and estimated to cost two crores. This project is in an advanced state. Another to tap the Kabul River 20 miles north of Peshawar is still in embryo.

Minor Capital Works.

Nearly all these are treated as Imperial.

Shahpur Inundation Canals.—There has been a great reduction in the revenue on these canals.

Ghaggar Canals.—The loss on the working of these canals has increased.

Name of Canals.	Shahpur inundation.	Ghaggar.	Total.
Acres of Land Irrigated ...	18,991	16,412	35,403
Miles in Operation	152	68	220
Capital Cost Rs.	2,15,914	3,43,245	5,59,159
Percentage of Net Revenue ...	18·00	Deficit Rs. 38,825	0·01
Total net Deficit Rs. ...	+7,11,433	−2,16,244	4,95,189

UNITED PROVINCES.

In the United Provinces of Agra and Oudh there are five Productive Works, irrigating 1,909,316 acres with a mileage of 8,593, the capital cost of which has been Rs. 8,73,54,769, yielding a net revenue of 7·58 per cent.; the total net revenue having been Rs. 4,16,15,024. The area irrigated is, however, gradually decreasing. The water charge is distinct from the land revenue as in the Punjab.

Canals.	Ganges.	Lower Ganges.	Agra.	Eastern Jumna.	Fatehpur Branch Lower Ganges.
Acres Irrigated ...	8,18,551	5,96,257	1,85,297	2,77,543	31·668
Capital Cost Rs. ...	3,20,80,153	3,66,24,484	1,03,19,938	47,57,968	35,72,226
Percentage of Net Revenue ...	9·66	4·66	5·75	22·82	4·05
Miles in operation ...	3,206	3,195	774	884	534
Total Net Revenue Rs.	2,00,61,061	−24,72,768	−7,32,416	2,55,33,480	−7,74,333

The Ganges Canal.—An old canal opened at the beginning of the 18th century took off from the left or eastern bank of the Jumna, it was re-opened early in the 19th century and now serves parts of the Saharanpur, Mozufarnagar and Meerut districts. Sir Proby Cautley used the experience he gained on this work in designing and constructing the Ganges Canal, and it was opened in 1854 after six years' work. It serves nine districts in the Jumna Ganges Doab, taking off from the right bank of the last named river just below the famous pilgrimage place, Hardwar, by means of a weir constructed of rubble stone, fascines, and earth work, made up annually, and annually destroyed by the floods. It passes over the Solani River in an aqueduct named therefrom, and is not only the first large original work executed in Northern India, but is reckoned second to none in boldness of conception and to very few in utility and financial success. It was originally designed for a flow of 6,750 c. feet per second. This was found to create too much scour, especially at the open Ogee falls. Nine lakhs were spent in remedying defects but the main original features were not altered.

On this system there are 1,730 miles of drainage channels, with the result that the lands which had previously remained flooded till the end of the cold weather are now drained sufficiently dry for the *rabi* sowings; the level of the subsoil water has ceased to rise and the sanitary condition of the district has been much improved.

The canal is carried over the Solani River by means of an aqueduct with fifteen 50-feet arches; it is 172 feet wide, with a discharge of 6,500 c. feet per second; the parapet walls are 12 feet 9 inches high. The cost was Rs. 32,87,000. The Puttri torrent is carried over this canal in an aqueduct and there is also the Rampur superpassage.

This canal supplies a large proportion of the water for the next two canals.

The Lower Ganges Canal.—The cost of the work per each cubic foot of full discharge was the highest in India, *viz.*, Rs. 3,838. It takes off, by means of a weir, at a point 130 miles below Hardwar on the right bank of the Ganges, and irrigates seven districts in the lower part of the Doab. It was opened in 1878 after six years' work. There is an escape back into the river about two miles below the weir sufficient to scour out the greater part of the silt. This canal is carried over the Nadrai or Kali Nudi River by means of an aqueduct with fifteen arches of 60 feet span, founded on wells sunk 50 feet below the bed of the river. The width is 130 feet and the maximum velocity is 4 feet per second; there is a 12 feet roadway on one side and a 6 feet bridle path on the other. The cost was Rs. 44,57,000. This and the Solani are the two largest works of the kind in the world.

The Agra Canal was opened in 1874. It takes off the right bank of the Jumna 11 miles below Delhi, at a place called Okla, and serves part of the Gurgaon, Muttra and Agra districts. On this work there is an escape below the weir

similar to that on the Lower Ganges Canal. The head works on these two canals were built on exceedingly fine sand—consequently the cost of them rose from 2½ to 45½ lakhs.

The Eastern Jumna Canal is remarkable for the enormous profit it has brought in to the State, it being the most remunerative work in these provinces. On this canal there are some level crossings similar to those on the Western Jumna.

MAJOR PROTECTIVE WORKS.

Name of Work.	Betwa Canal.	Ken Canal.
Acres of land irrigated ...	1,17,563	.....
Miles in operation	573	... ..
Capital Cost Rs.	48,67,742	7,74,606
Percentage of Net Revenues ...	0·84	Deficit Rs. 155,82
Total Net Profits and Deficit Rs. ...	−39,49,827	−18,184

The Betwa Canal is not likely to prove remunerative in its present condition, but the construction of an additional reservoir will provide additional storage for 1,484 millions c. feet of water which, it is anticipated, will have a beneficial effect on the receipts. It takes off from the Betwa (a tributary of the Jumna) about 12 miles north of Jhansi, and irrigated portions of the Hamirpur and Jaloan districts; it is not perennial and was opened in 1885. The demand for water while it is flowing is slack, except in dry season. 2,700 million c. feet of water are stored at present, the weir being 56 feet high. The canal was found very useful in the 1896-97 famines, when it irrigated 87,000 acres.

The Ken Canal is in progress and is intended to protect the Banda district, which was hit so hard in 1896-97. It is not likely to prove otherwise remunerative. There is not a great field for extension in these provinces. Over 30 years ago a big project was proposed to take a canal off the right bank of the Sarda River and to irrigate the Oudh districts. This, as well as a smaller project, has always met with strong opposition, although additional protection is urgently needed in the districts South of the Jumna.

MINOR CAPITAL WORKS.

Dun Canals.	Rohilkhand Canals.	Bijnor Canals.	Bundelkhand Irrigation Works.	Total.
14,496	47,756	10,018	5,019	1,94,852
87	397	76	66	1,199
9,24,366	24,23,102	2,35,870	82,031	93,07,917
6·74	1·82	14·70	Deficit Rs. 4,354	.....
+15,08,608	+9,90,719	×4,96,049	−47,501	−10,20,136

The Minor works were all treated as "Provincial," 750,000 acres are irrigated by private canals; the most important being those constructed by two English landowners which irrigates 40,000 acres of rice and 15,000 of rabi crops on their respective estates.

Canals in this province water-logged the soil and created malaria, besides covering the tracts with *Usar* or *Reh*. These evils have been cured by re-alignment and by 3,300 miles of drainage channels.

MADRAS.

Nearly all new works include or supersede old ones. On newly irrigated land at one time the water ("wet") rate might be levied on the whole area for which water had been supplied, or on areas actually irrigated in addition to the "dry" rate. Subsequently on revision of the settlement the two rates were consolidated, representing the revenue assessed on land entitled to irrigation. This has many advantages where most of the crop is paddy raised every year. The maximum sugarcane rate was Rs. 10; on rice Rs. 5 to Rs. 2; the average of all rates being Rs. 4-8.

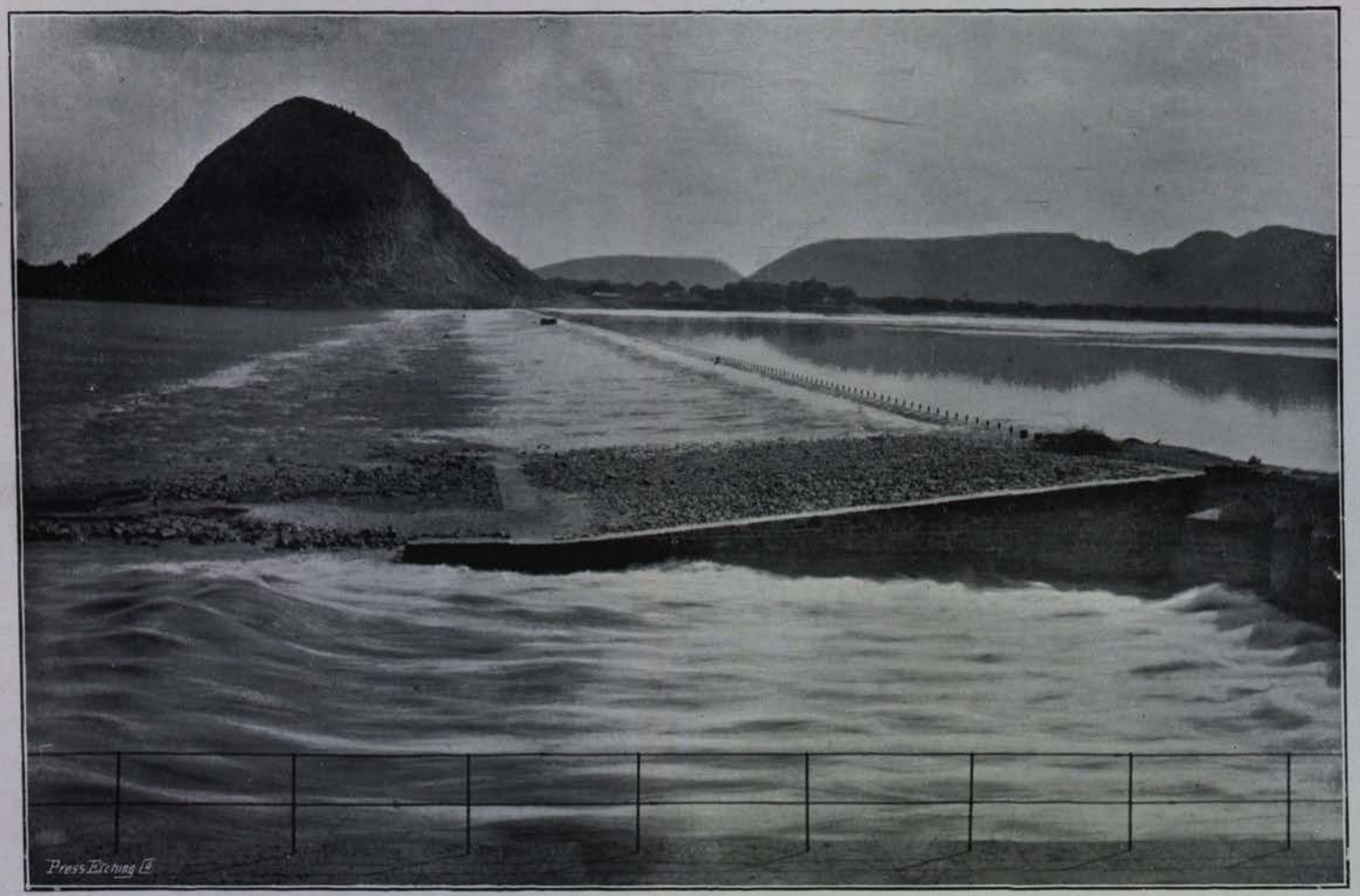
MAJOR PRODUCTIVE WORKS.

In the province of Madras there are eight Productive Works irrigating 2,940,599 acres, with a mileage of 8,304, the capital cost of which has been Rs. 7,18,66,138, yielding a net revenue of 8·79 per cent.; the total net revenue having been Rs. 8,58,41,824. The area irrigated exceeded all previous records.

In this province there are 40,000 small storage tanks for irrigation purposes in the ryotwari tracts; of these only 3,500, which are looked after by the Public Works Department, irrigate more than 200 acres, many of them serving less than 10 acres. Thirty-one thousand of these tanks are under the charge of the Revenue Officers, while 5,000 are private works. Some of these and also some of the larger works of a similar nature are very old. Two tanks in Chingleput district still serve 2,000 to 4,000 acres and are 1,100 years old according to inscriptions. The Chembrambakam and Cumbum tanks hold between 3,000 and 4,000 million c. feet and cover over 959 miles. On zemindari estates two million acres are irrigated from tanks and half a million by wells and watercourses, including spring channels in beds of streams during the dry season.

In the Native States 625,000 acres are irrigated or 57 per cent. of the estimated culturable area. In 1857 the Provincial Government was instructed to submit proposals for works to be carried out by private agency. These were submitted as will be noted later on.

The Godaveri Delta System.—The Dowlaishwaram Weir on the Godaveri River was sanctioned in 1884; it is 2½ miles long; it is in four sections on a bed of pure sand, and the flood rises 28 feet; the main wall is on 6 feet wells sunk 6 feet, and is from 3 to 4 feet thick; over this there is a masonry flooring 47 feet wide of which 19 feet are horizontal, the remainder sloping and curved, it is 4 feet thick and ends on another row of similar wells, below which there is a rough stone pitching 70 to 80 feet wide. This work



THE KISTNA ANICUT.

was constructed by Sir Arthur Cotton in 1844-50, and is one of the two most remunerative works in the Presidency.

The Kistna Canal was planned by Sir Arthur Cotton, who also at the invitation of the Provincial Government as mentioned above, proposed irrigating large portions of the Bellari, Kurnool, Cuddapah and Nellore districts. The Madras Irrigation Company was formed to carry out the whole scheme under a Government guarantee, only a portion of which, however, was ever completed, and the Government took over the works in 1882. The complete Tungabhadra project for utilising the river of that name (a tributary of the Kistna) as well as storage work on the Kistna itself are being considered and, should it be found possible to carry them out at a reasonable cost, they may yet be constructed.

There is no doubt that more storage works are required as the existing ones are insufficient for present needs. Whereas if they were adequate, second crops might be sown and the famine districts be completely protected. But both the country and the soil are unfavourable to canals, and the works would be very costly. The question is therefore whether indirect profits from absence of famine would not justify the outlay.

committing themselves to any big schemes; and, although the result of working by Government agency had proved very encouraging they considered private agency more advantageous; this however, for various reasons, did not prove to be the case. However, the percentage of working expenses to gross revenue was the lowest in India, *viz.*, 10·59. The grand anicut on this system was constructed 1,600 years ago. The Cauvery system is the other work alluded to above as being most remunerative.

The tendency of main streams to go back to old channels has already been mentioned; this has had to be checked in this instance by an anicut across the Cauvery and Coleroon Rivers in order to preserve the present arrangement. The marginal embankments have had to be raised higher and higher and are cut from time to time to provide discharges on to the low lands in moderate amounts; this being the course taken generally by Nature when she is undisturbed by artificial restraints. The Upper Coleroon anicut is now being remodelled.

The Srivaikuntham Anicut is on the Tambraparni River, in Tinnevelli, south of Tuticorin.

Kurnool Canal.—The Kurnool-Cuddapah Canal is the only part of Sir Arthur Cotton's big project that has so far been constructed. The Madras Irrigation

Name of Work.	Godaveri Delta Seystm.	Kistna.	Penner River Canals.	Cauvery Delta System.	Srivali Kuntham anicut System.	Kurnool Canal.	Barur Tank.	Periyar Project.
Acres Irrigated ...	8,78,999	6,48,247	1,29.007	9,89,226	44,074	88,919	5,193	1,56,634
Capital Cost Rs. ..	1,36,93,341	1,53.22.551	64.38,713	32,73,568	15,97,016	2,17,71,294	4,34,841	93.34,814
Percentage of Net Revenue ..	19·34	14·49	0·13	25·90	6·34	0·48	1·07	4·08
Miles in operation ...	2,466	2,371	473	2,094	90	505	29	276
Total Net Revenue Rs.	4,87,83709.	2,99,69,631	9,01,860	2,79,87,628	3,00,928	−1,96,03.808	−2,42,183	−22,61,6c2

The present weirs on the Tungabhadra were constructed by Krishna Raya at the beginning of the 16th century. The old dams, called *corumbos*, were composed of earth and brushwood and were renewed every year. The Bezwada anicut was built in 1852-55; it is 3,714 feet long and 20 feet above the deep bed of the river. It is founded on pure sand and is situated in a deep gorge, where floods rise 40 feet at times giving a depth of 19 feet over the crest, with a discharge of 770,000 c. feet per second. On this canal a "syphon" crossing got choked by detritus and was carried away.

The Penner River Canals.—The net revenue from these canals which averaged 4·46 between 1896 and 1904 fell to 0·13, as noted above, owing to the grant of large remissions and to the diminution in the area of second crop cultivation in 1904-05, on account of the unfavourable character of the season.

The Cauvery and Coleroon Delta System.—These works in Tanjore were started under native rule and were improved by Sir Arthur Cotton in 1835-36. As the funds for these and the similar works on the Godaveri and Jumna, already mentioned, were provided out of revenue only, the East India Company shrank from

Company came to grief over the work, and it has never been successful—even now it only just pays its way, and is never likely to become really "Productive." The capital cost was greatly in excess of the estimate, and the works were taken over by the Government in 1882. On this canal there is a bank 50 feet high on side long ground; it is 35 feet high for miles. The average cost per acre irrigated has been Rs. 24-6.

The Barur Tank is one of the most unremunerative works in the province and it is not expected that it will ever yield any profit, so as to justify its inclusion among "Productive" works.

The Periyar Project.—The works which were opened in 1896 have so far cost about Rs. 1,300 per million c. feet of water stored. They consist of a large storage reservoir in Travancore on the western side of the Ghauts, with a concrete dam across a narrow gorge in the Periyar River, which discharges on the Malabar Coast. The impounded water is diverted by a tunnel through the hills into the Vaigai River on the eastern side of the Ghauts; this river discharges into the Palks Straits in Madura and there are many old irrigation works upon it, but the supply therefrom is very uncertain. The scheme was designed and carried

out by Colonel J. Pennycuick, R.E. The reservoir holds 13,000 million c. feet, of which 6,815 million c. feet are available for supplementing the Vaigai flow. The dam is of concrete 1,241 feet long and 155 feet high to its crest with a 3 feet parapet. The tunnel is 5,704 feet long and is 90 square feet in area, with a gradient through it of 1 in. 75. Stoney's Gates are fixed at the head of the tunnel and the water flows for 86 miles down the Vaigai River to a weir with the ordinary distribution canals, serving 200,000 acres which were previously subject to severe droughts. A steady improvement is noticeable in the case of this project and it is anticipated that its return will still further improve when the distributing works are completed. The head works at Peranai have been remodelled.

The incidence of Irrigation Revenue per acre served is the highest in India, *viz.*, Rs. 10·65; the cost of Revenue management per acre irrigated is also the highest, *viz.*, Re. 1·11; as is likewise the maintenance of works per acre, *viz.*, Rs. 2·19; and the total working expenses, *viz.*, Rs. 3·42

Minor Capital Works.

The acres irrigated were 521,786, with 2,548 miles in operation, at a capital outlay of Rs. 1,15,18,282. The percentage of net Revenue being 4·41 and the total net Revenue Rs. 2,15,75,126. These works were all treated as "Provincial."

Name of Work.	Chembrambank Tank.	Madras Water-supply and Irrigation Extension Project.	Palar Anicut System.	Lower Coleroon Anicut System.	Pelandorai Anicut System.	Satiatope Anicut System.	Tiruk Koyilur System.	Cheyeru Anicut System.	Poiney Anicut System.	Sagiteru Project.	Munyern Project.	Chopad Project.	Seventeen other Works under one lakh.
Acres Irrigated ..	11866	7,946	79,511	111,453	11,277	33,279	26,332	29,032	17,168	3,698	2,221	..	1,88,088
Miles in operation ..	27	10	296	896	63	190	163	181	182	14	57	..	469
Capital Cost Rs. ..	747107	17,72,920	23,61,837	14.05,499	5,94,844	3,93,832	3,10,068	4,12.179	2.36,290	4,57,723	5.92 916	5,39,853	16,87,794
Percentage of Net Revenue ..	0·21	0.81	Deficit Rs. 13,264	15·58	3·50	20.23	4·18	3·33	6·79	Deficit Rs. 6 782	0.57	Deficit Rs. 238	8·72
Total Net Profit or Deficit Rs. ..	+8,27,011	+1,32.777	+19,24,140	+1,07,60,552	−42,066	+26,32 427	+4,84,496	+4,97,876	+8.71,536	−12.933	+9,635	−713	+34.90,388

Major Protective Works.

Name of Project.	Rushikulya.	Mopad.	Total.
Acres irrigated	...	96,274	96,274
Miles in operation ...	...	216	216
Capital Cost Rs. ...	50,04,088	1,748	50,05,836
Percentage of Net Revenue ...	0,74	Deficit Rs. 33	0,74
Total Net Deficit ...	20,9:,764	33	20,93,797

Taking these two classes of work together, the percentage of working expenses on gross revenue was 22, being the lowest in all India.

The Rushikulya Canal is not likely to prove remunerative

BOMBAY-SIND.

Many tracts in this province have become deserts through being covered with drift sand, or through the destruction of trees by human agency. Tank irrigation is unknown, but the rainfall is so slight and so uncertain that this is not surprising, so that irrigation canals have always been in use, and have been improved and greatly added to by the British Government, as cultivators depend entirely on them to produce the rice and wheat they grow. The so-called "wet" and "dry" rates have been consolidated on revision of the settlement, and they now represent the revenue assessed on land entitled to irrigation. The rates vary, however, with the method of irrigation (whether flow or lift), with the area cultivated, and, to some extent, with the crop sown; the quantity of water used, when it is used, the quality of the soil, the intensity and constancy of the demand, and the increased value of the output are also taken into consideration. Nine-tenths of the revenue assessed are credited to the canals and the rates average Re. 1-9 per acre the working expenses to 8*a*. (the lowest in India).

The rise and fall of the Indus at Sukkur is 15 feet, at Kotri 230 miles lower down it is slightly less. At the former place the maximum discharge is 800,000 c. feet per second. The silt at the head of these canals is some times so great that a new head has to be cut.

Major Productive Works.

In the province of Sind there are eight Productive works irrigating 1,201,889 acres; the total length of the canals being 2,122 miles. The capital cost of which has been Rs. 2,51,82,393, yielding a net revenue of 5·17 per cent. The total net profit has been Rs. 66,15,516. The total area irrigated exceeded the average of the last nine years. The average value of the crops per acre was Rs. 19·1 and the average rate of revenue assessed per acre was Rs. 2·1, thus being the lowest figures in India.

The Desert Canal is the only one showing a maximum net revenue since 1896. It is also notable as having the highest percentage of working expenses to net revenue (excluding two exceptional cases), while

the cost of revenue management for each rupee of irrigation revenue, and the incidence of irrigation revenue per acre irrigated, are the lowest. The gross revenue has risen steadily in the last three years.

The Umharwah Canal.—The net revenue on this canal was as high as 17·96 per cent. in the triennium 1896-99. The gross revenue has declined in the last three years. The cost of revenue management per acre irrigated is the lowest in India, being Re. 0·10.

Name of Canal.	Desert.	Umharwah.	Begari.	Eastern Nara.	Jamrao.	Dad.	Wasrat.	Mahiwah.
Acres irrigated ...	199,513	66,595	232,598	269,415	260,030	68,085	77,033	28,619
Miles in operation ...	318	98	158	298	591	355	234	60
Capital Cost Rs. ...	26,67,057	6,59,688	17,06,799	66,02,930	82,59,133	22,69,474	16,70,495	13,46,817
Percentage of Net Revenue ..	7·17	9·54	17·23	6·26	3·85	Deficit Rs. 1,16,232	0·87	3·11
Total Net Revenue Rs. ...	9,31,060	8,66,097	44,65,646	16,12,015	-5,68,549	-5,09,568	-1,54,592	-26,247

The Begari Canal.—The net revenue on this canal was also as high as 21 per cent. in the same triennium, but it has been very steady on the whole, as has also been the gross revenue. These three canals also take off from the right bank of the Indus above Sukkur and have been practically made by Government.

The Eastern Nara Canal.—The net revenue returns were the lowest since 1896-99, having been as high as 7·32 in 1899-1902. The total working expenses per acre irrigated were the lowest in India, *viz.*, Re. 0·47. This canal takes off from the left bank of the Indus above Sukkur and discharges into the Runn of Cutch giving perennial supply.

The Jamrao Canal was opened in November 1899 and the net revenue rose to 5·08 in 1903-04. The gross revenue on this has fluctuated considerably in the triennium 1902-05, but has improved considerably on the whole. It takes off from the Nara at the lower boundary of Khairpur State and the tract is being colonised.

The Dad Canal.—The gross revenue on this has steadily declined in the same period.

The Nasrat Canal.—The same remark applies to this canal which was opened in 1903-04.

The Mahiwah Canal first came into operation in 1903-04 and the gross revenue has dropped over 40 per cent. since then.

The Naulakhi Canal is under construction but has not yet been mentioned in the returns.

Minor Capital Works.

There are eight of these, irrigating 798,434 acres, the capital cost of which has been Rs. 45,54,478 yielding a net revenue of 19·48 per cent.; the total length of the canals being 1,826 miles. The total net profit has been Rs. 2,36,94,290. These works were nearly all treated as "Imperial."

Name of Canal.	Sukkur.	Ghar.	Great Marak.	Sarfrazawah.	Fuleli.	Three other works costing under 1 lakh.
Acres Irrigated ...	82,060	2,51,537	55,835	26,658	3,46,712	35,632
Miles in Operation ...	130	296	172	111	1,024	193
Capital Cost Rs. ...	14,25,974	4,98,602	2,15,746	1,24,680	18,61,503	4,27,973
Percentage of Net Revenue ...	2·50	92·67	20·13	11·88	16·16	7·09
Total Net Revenue Rs.	15,09,268	1,46,44,882	11,31,617	2,52,784	60,42,644	1,13,095

Of these canals the Fuleli alone is navigable; it lies in the Hyderabad district, is generally perennial, and can serve 400,000 acres. There are four small works in progress on the left bank of the Indus and many extensions have been proposed; when these have been carried out the present area irrigated will be increased by 20%. This area fluctuates about 800,000 acres according to the state of the river, but the canals never fail entirely, are cheap and profitable—witness the Ghar, which pays nearly 93%, and which has returned its capital outlay more than 29 times. There is no doubt that a weir will have to be put up at Sukkur, owing to the amount of water that will eventually be abstracted from the upper part of the Indus for the Punjab Canals. It will be a very difficult and costly job owing to the strength and depth of the current even at low water.

BOMBAY-DECCAN AND GUJARAT.

The rainfall in the Deccan plateau is very uncertain and is almost entirely due to the south-west monsoon; some very large storage works have therefore been constructed. There are remains of very large tanks such as the Madag Tank in the Dharwar district. Excluding wells, $\frac{2}{3}$rds of the irrigation depends on field embankments and small tanks serving from 3 to 400 acres, most of which the State, on account of its great interest in the revenue, now controls and contributes to their maintenance and improvements. The total area served by private canals is probably about $7\frac{1}{2}$ million acres, but many of these are apt to fail when most wanted. This uncertainty accounts for the non-success (financially) of the Irrigation works in these parts of the province; moveover storage works are costly and the demand is irregular except on small areas on which high class crops are raised and which pay high rates. The loss by evaporation, leakage and absorption is also very great, being from 10 to as much as 62%. So-called "occupiers" rates are levied on all major and on several minor works, generally from Rs. 10 to Rs. 25 per acre on sugarcane, the average being Rs. 4-8. The working expenses are the highest in India, being Rs. 2-8. The charge for Irrigation works are small compared with those of other provinces and the extent of area irrigated by them continues steady with slight variations. The works have not yet paid off the interest charges.

Major Productive Works.

There are seven works in this province irrigating 31,885

acres; this area is gradually decreasing. The total length of the canals being 433 miles. The capital cost of these has been Rs. 1,15,40,351 yielding a net revenue of 1·87%. The total net deficit having been Rs. 9,118,750.

The Mhasvad Tank is not likely to prove remunerative.

The Nira Canal is also not likely to prove remunerative.

The Shetphal Tank is another unremunerative undertaking and is likely to remain so.

Names of Works.	Hathmati Canal.	Lower Panjhra River Works.	Kadva River Works.	Lakh Canal.	Mutha Canal.	Ekruk Tank.	Krisna Canal.
Acres Irrigated	51	2,489	4·584	556	10,971	4,816	8,185
Miles in Operation	51	45	38	·32	155	48	64
Capital Cost Rs.	5,17,833	4,68,621	7,99,240	3,71 891	71,75,748	13,40,386	8.66,627
Percentage of Net Revenue	Deficit Rs. 24,150	0·86	1·27	Deficit Rs. 17·508	2·25	0·97	4·09
Total Net Deficit Rs.	6,95,515	3,74,410	7,62,847	7,43,316	40,61,084	17,28,384	7,59,194

The Kadra River Works have cost Rs. 3,605 per mile.

Major Protective Works.

There are six (including the Gokak Canal 1st section, which is now classed as a minor work, and included in the Gokak Storage Works) irrigating 60,564 acres, the total length of the canals being 353 miles. The capital cost of these has been Rs. 95,87,720, yielding a net revenue of 0·55%. The total net deficit having been Rs. 56,89,729, which is not likely to be recouped within a reasonable time, although the works are classed among "Productive" ones. Taking these two classes of works together, the average value of the crops per acre was Rs. 82; the average rate of revenue assessed was Rs. 5-8, and working expenses per acre irrigated came to Rs. 2-9; these figures being the highest in all India.

Name of Work.	Gokak Canal 1st Sect.	Mhasvad Tank.	Nira Canal L. Whiting.	Serphal Tank.	Charikapur Tank.	Maladevi Tank.
Acres Irrigated ...	....	8,615	48,822	3,127	.....	...
Miles in Operation ...	.. ...	107	239	7	.. .	.....
Capital Cost Rs. ...	4,12.666	20,91,430	56,90,988	7,06,228	3,62,458	3,14 950
Percentage of Net Revenue ...	Deficit Rs. 16·098	0·13	0·80	0·73	Deficit Rs. 10,545	Deficit Rs. 12,050
Total Net Deficit Rs.	3,65,654	17,39,431	33,14,759	1,16,197	78,358	75.330

Minor Capital Works.

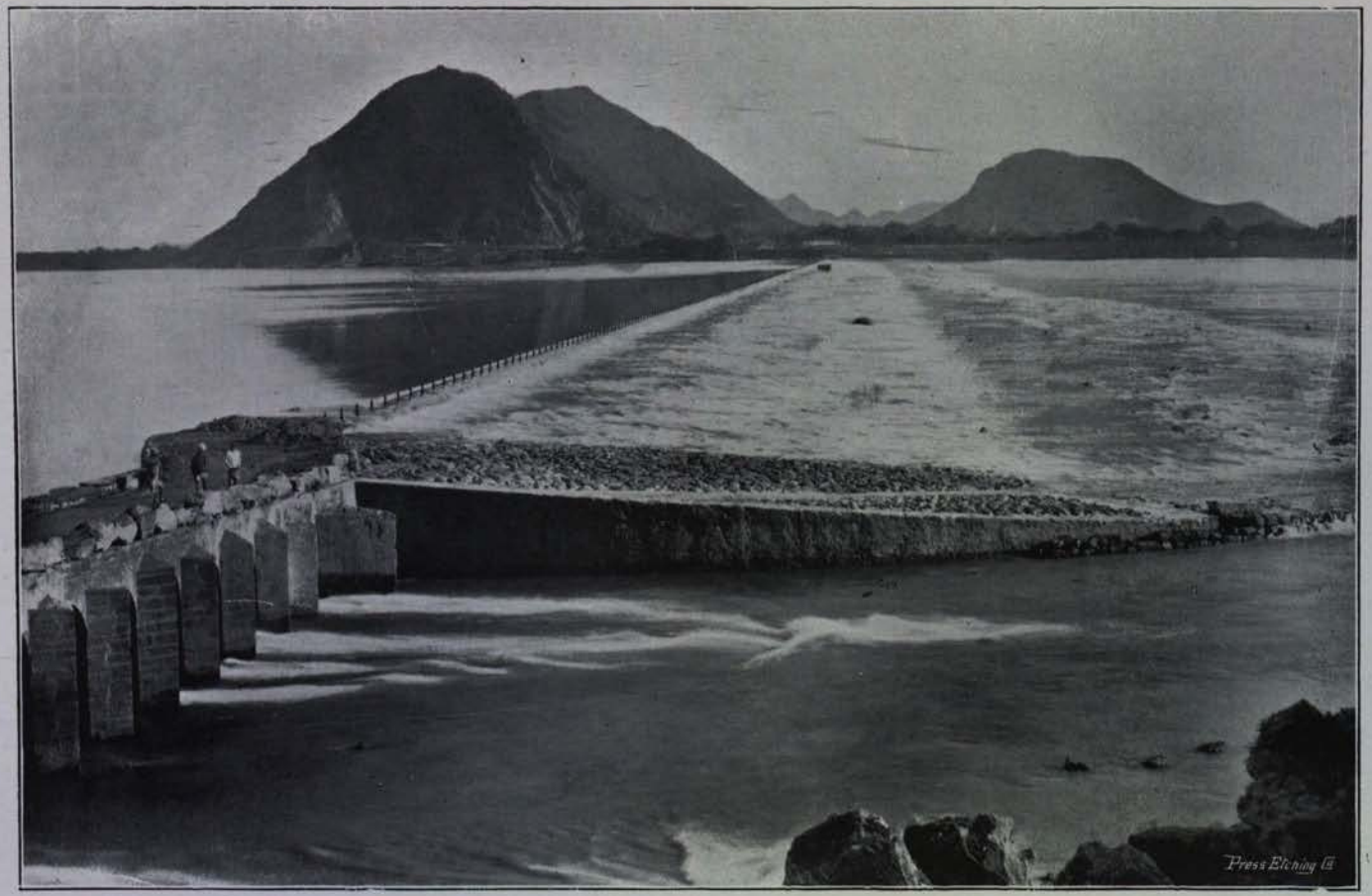
There are thirty of these irrigating 40,695 acres, the total length of the canals being 480 miles. The Capital cost of these has been Rs. 86,36,900, yielding a net revenue of 0·46%: the total net profit having been Rs. 42·275. The works were nearly all treated as "Imperial."

Minor Revenue Works.

The figures for Sind and the Deccan separately are not available. Those given by the Secretary to the Government of India are as follows:—Acres irrigated, 1,033,044: Revenue Receipts, Rs. 22,95,972: Charges (direct only), Rs. 12,66,691; Net Revenue, Rs. 11,28,381. The figures given by the Accountant-General are:—Direct Receipts, Rs. 40,552; Expenditure, Rs. 21,71,411.

Nearly all the works suffered financially from the fall in the price of sugar. On the Nara Canal, for example, although the area irrigated rose some 50%, in the last 12 months revenue fell 76% in the same period.

The Mutha Canals will be fed from the Mutha reservoir at Kharavasta (Lake Fife) on the river of that name, which is fed from the Ghats in the Poona District of Bombay, where the rainfall amounts to 200 inches, over a catchment area of 169 square miles; the fall of the river is 6 feet per mile. The capacity of the reservoir 4,911 million cubic feet. The dam is 3,687 feet long, 106·7 feet high, and 11·75 feet above the crest



THE KISTNA ANICUT FROM SITANAGRAM END.

Name of Work.	Khari cut.	Jamdar Canals.	Parsul Tank.	Pravara River Works Ojhar Canal.	Bhatodi Tank.	Matobat Tank.	Shiranphal Tank.	Bhadatvadi Tank.	Ashti Tank	Upper Main River Works.	Yerla River Irrigation Works.	Maini Tank.	Madag Tank.	Muchkundi Tank.	Gokak Canal 1st Section and Storage Works.	Sixteen other Works less than 1 lakh.
Acres Irrigated	47	4,242	628	7,187	849	2,111	1,371	1,531	2,768	870	3,948	1,611	761	4	9,571	3,200
Miles in Operation	36	114	5	40	10	17	12	10	30	24	37	17	9	7	49	65
Capital Cost Rs.	6,17,151	10,41,089	2,14,905	3,38,530	3,79,707	2.01,422	2,24,568	2,27,422	8,36,091	4.39,286	7,62,623	4.44,477	1,67,598	1,58,707	9,42 309	16,40,322
Percentage of Net Revenue ..	Deficit Rs. 7,278	Deficit Rs. 3,388	0·80	0·57	Deficit Rs. 209	3·06	Deficit Rs. 995	0·41	Deficit Rs. 187	0·17	0·95	0·97	0·20	Deficit Rs. 3	2·49	0·29
Total Net Profit or Deficit Rs...	+16,658	-2.36,113	+8,741	-1,10,820	-32,707	+1,36,383	-9,791	+5,444	-82,295	-39.694	-50 026	+13,271	-2,218	-3,838	+3,30,375	+99,005

of the waste weir. The clear length of the sluices is 1,030 feet and the discharge over the waste weir amounts to 74,877 cubic feet per second. The cost works out at Rs. 48·5 per acre irrigated, the highest in India. The cost of the distributaries was also the highest, *viz.*, Rs. 12,170, and the cost per acre irrigated, Rs. 108.

The Mhasvad Tank has a capacity of 3,072·1 million cubic feet and of 3,262·7 million cubic feet above sluice level. The catchment area is 480 square miles, on which the average rainfall is 22·8 inches.

The fall of the river is 12 feet per mile. The length of the dam, which is of earth, is 9,080 feet, and its maximum height 79·8 feet, the height above the crest of the weir is 13 feet; the length of the waste weir, 3,000 feet, and its discharging capacity 235,545 c. feet per second.

Nira Canal.—This work, though not directly remunerative, proved most valuable in the famines of 1896-97 and 1900-01. The river is fed from the same source as the Mutha. The works consist of three parts, *viz.*, 1st, the Bhatgarh Reservoir, commonly called "Lake Whiting" which is on the Yelwandi River; 2nd, the Vir basin formed by a weir at Vir on the Wira River; 3rd, the main canal taking off from the left bank of the same. The reservoir contains 5,313 million c. feet, of which 3,953 million c. feet are available for irrigation. The waste weir has 103 openings of 10 feet, of which 88 have automatic gates, the others being worked by hand gates and stop planks. The canal will serve 275,000 acres; the catchment area is 128 square miles in extent, on which there is a rainfall varying from 40 inches to 250 inches. The dam is 3,020 feet long, 127 feet high from the foundations, and has a roadway on top carried by arches over the two waste weirs. These are 810 feet long, and will carry off a maximum flood of 51,600 c. feet. per second, with a 10-foot head. There are 15 under-sluices 8 feet by 4 feet through the dam to clear the silt away, and they are 12 feet above the bed of the river which falls 5 feet per mile. The main weir at the head work is 2,273 feet long and 42 feet above bed of river.

The Pravava River Works in Ahmednagar district will store 8,670 million gallons at a cost of Rs. 350 per million gallons. The dam is designed to be 1,425 feet long and 250 feet high. The watershed is 47 square miles in area on which the rainfall varies from 150″ to 450″. The waste weir is 850 feet long and is fitted with automatic gates 10 feet by 8 feet.

BENGAL.

Major Productive Works.

There are three of these irrigating 800,227 acres, the total lengths of the canals being 3,447 miles. The Capital cost of these has been Rs. 6,17,98,560, yielding a net revenue of 1·59 per cent., the total net deficit having been Rs. 6,56,72,463. These works though classed as "Productive" are not likely to come under the description of those likely to "cover all charges for interest within a reasonable time." The Revenue rate is only 7 per cent. on the value of the crops and

Name of Canal.	Sone Project.	Midnapore Canal.	Orissa Project.	Dhaka Canal.	Tribeni Canal.	Saran Project.	Totals.
Acres Irrigated ...	4,92,265	85,892	2,22,070	.....	.....	.....	8,00,227
Miles in operation ...	1,585	369	1,493	.....	.....	24	3,471
Capital Cost Rs. ...	2,67,25,176	84,82,468	2,65,90,916	3,54,698	12,52,565	7,14,170	6,41,19,993
Percentage of Net Revenue ...	3·25	0·82	0·18	Deficit Rs. 11,595	Deficit Rs. 39,126	Deficit Rs. 1,249	.....
Total Net Deficit Rs.	2,21,14,599	1,00,79,526	3,34,78,338	29,811	97,525	1,53,490	6,59,53,289

this might well be enhanced. In the famine year 1896 the value of the crops matured by the same canal was 10 per cent. of its capital cost up to that time; for this the cultivators paid only 7 per cent. of the increment the canal gave them. Outside the irrigated lands the crops failed entirely.

The rainfall in Lower Bengal and Assam averages 70 in. per annum. In the permanently settled district, especially in Behar, small canals, called *pains* intersect the country and take water direct to the rice fields, or to small ranks called *ahars* formed by field embankments; nearly five million acres are irrigated in this manner.

Irrigation water is seldom required and the uncertainty of the demand is the cause of the unproductiveness of the works unless higher rates can be obtained. They are, however, indispensable as protective works in the densely populated parts.

Five or seven years' water leases are granted for blocks of land with many holdings; each occupier is charged according to the size of his holding, whether he takes water or not. This is subject to revision, and to remission for failure of crops, even when not due to faults in the supply. This occupiers' rate does not prevent rise in rents due to water advantages. The rate on rice is from Rs. 1-8 to Rs. 2-8; the average rate all round being Rs. 1-9; the charge for irrigation comes to about 6 per cent. of the crop value.

The Sone Project is in Southern Behar. The Dehri weir was constructed in 1869-74 and is 2¼ miles long. The main canals take off from each bank of the river; the discharge varies from 350,000 to 803,000 c. feet per second. The canal crosses the Kao Nullah by means of syphons which have to be cleared of detritus occasionally.

Midnapore Canal mostly serves rice crops.

The Orissa Project.—The East Indian Irrigation and Canal Company was formed to carry out Sir Arthur Cotton's project; but the Company were unable to complete the works, and the Government purchased them in 1869. One remarkable work on the Orissa Coast Canal is the crossing of the Rutmoo Torrent by an inlet on one bank and escapes on the other.

The cost of Drainage and Protective work, owing to an extensive system of embankments, were the highest in India, *viz.*, Rs. 7-9 per acre irrigable.

Taking these two classes together, the percentage of working expenses on gross revenue was 50·8, being the highest in all India. On the *Minor Revenue Works* the charges were Rs. 1,39,748 and the Revenue Receipts Rs. 95,112, showing a deficit of Rs. 44,636. These works were all treated as "Provincial."

Dhaka Canal.—The estimated cost per cubic foot and full discharge is the lowest in India, *viz.*, Rs. 357.

The Tribeni Canal, although a perennial one, has not required a weir at its head works; it is situated in the northern part of the Champaran district and is not yet completed. It crosses the drainage of a large area in the Champaran district and has six "syphon" crossings; one under the Burra Bubsah carries nearly 3,000 c. feet per second.

BURMA.

Major Productive Works.

The Irrigation works have reclaimed 489,579 acres at a capital cost of Rs. 12,776,156, on which the tota net revenue to 31st March 1905 was Rs. 1,38,40,756. As irrigation develops, the working expenses per acre are gradually decreasing. The rainfall in Lower Burma averages 70 inches per annum of rainfall.

There are many very old tanks in Upper Burma, the most important of which is the one in Meiktila.

The Mandalay Canal was opened in 1902-03 and irrigated 7,000 acres in that year. The average cost per mile was Rs. 71,012, the highest in India. This canal is carried across the Thapangaing River by an aqueduct with 12 barrel arches 22 feet by 12½ feet, 300 feet long, with a width of 46 feet; the parapets are formed of shutters 7 feet high and 5 feet wide, which are lowered in extraordinary floods. The total width of flooring is about 200 feet; the discharge is 60,000 c. feet, partly over, partly under; it was constructed in 1899-1901 and cost Rs. 384,371.

	Major Productive Works.			Minor Capital Works.	
Name of Works.	Mandalay Canal.	Shwebo Canal.	Mon Canals.	Irrawaddy Embankment.	Tongwa Island Embankment.
		Under Construction.			
Acres of re-claimed land ...	43,729	.....	.....	4,14,914	30,946
Capital Cost Rs. ...	52,00,412	38,85,446	2,60,399	32,01.990	2,27,909
Percentage of Net Revenue	0·23	Deficit Rs. 1,27,357	Deficit Rs. 6,203	29·64	19·13
Total net Deficit Rs. ...	9,64,029	296,180	8,392	1,48,63,615	43,05,805

Minor Capital Works.

Fifty lakhs have been spent in restorations and repairs. There are numerous private irrigation works, especially in the Magwe district and along the tributaries of the Irrawaddy. The water-rate has been consolidated in the settled districts as previously explained in the case of Madras and Bombay.

Minor Revenue Works.

Which served 472,804 acres, the net revenue Receipts were Rs. 2,62,708, the charges being 80% of the gross revenue.

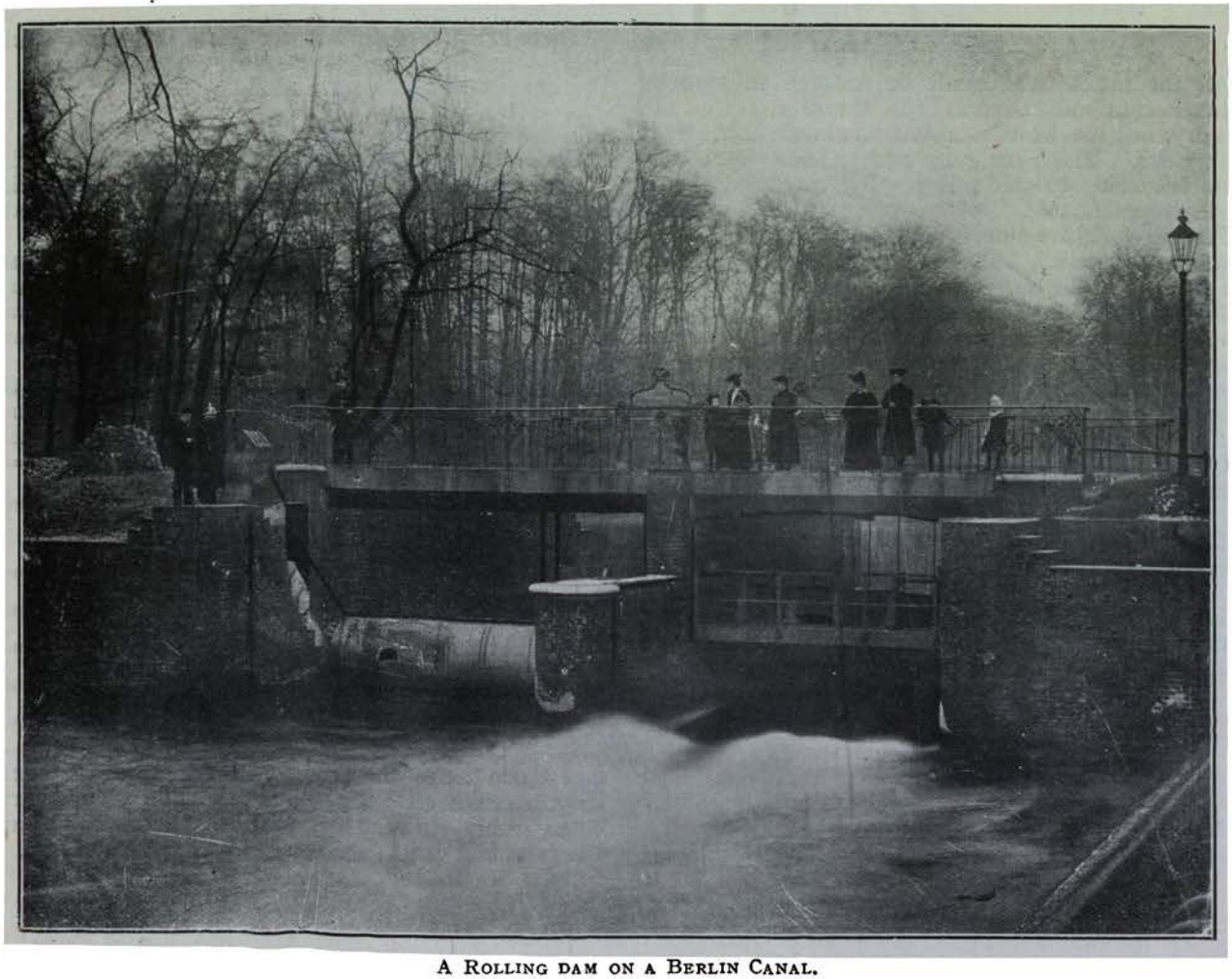
CENTRAL PROVINCES.

There are no State Irrigation works. Besides the tanks mentioned below, there are 50,000 small private tanks in rice-growing districts, which protect from

150,000 to 650,000 acres, according to the season. No complete failure of rain had been known till 1896 and the pressure of population had been light; in fact, if anything, there had been too much rain. Since 1896 there have been such severe famines that protective works have become necessary, but are not likely to pay. In Berar, for instance, only wells were used; the later rains failed in 1896, and there was a severe famine in 1899; still the necessity for irrigation is not often felt. The northern hilly tracts would lend themselves to storage works, but in the south, in Malghat and Balaghat, especially in the latter, tanks might fail during severe droughts. In Coorg it is only in a narrow strip along the eastern boundary that the failure of the rains occurs sometimes; a few petty works have been constructed here.

NORTH-WEST FRONTIER PROVINCE.

Major Protective Work.		Minor Capital Work.
Name of Work.	Lower Swat River Canal.	Kabul River Canal.
Acres Irrigated	1,59,412	27,843
Miles in Operation	208	65
Capital Cost Rs.	41,70,702	6,31,070
Percentage of Net Revenue ...	9·70	14·40
Total Net Profit Rs.	12,11,693	7,24,880



A ROLLING DAM ON A BERLIN CANAL.

Name of Tank.	Khairbanda.	Khapri Arando.	Marowda.	Khola.	Kusrangi.	Khaira Datan.	Kukerdehi.	Binakheri	Hargahan.	Pindraon.	Asolamenda.	Total.
Capital Cost Rs.	1,86,397	1,21.040	1,60,136	87,642	1,08,858	70,131	76,877	74,173	59,914	1,26 251	1,17,934	11,89,353
Percentage of Net Revenue and Deficit Rs.	5,130	3,078	4,251	2,485	3,250	0·01	1,726	1,631	1,452	2,685	2,826	30,799
Total Net Deficit Rs. ..	7,900	3,814	5,535	3,201	4,199	2,928	1,980	1,904	1,807	2,939	3,492	39,699

The Lower Swat River Canal, although sanctioned as a protective work, has proved a highly remunerative one. The canal, although a perennial one, has no weir at its head works. This work was first considered by Sir Henry Lawrence before the annexation. Sir Henry Durand revived the scheme in December 1870, and the canal was opened in February 1888.

The syphons on this work are formed of steel pipes 3¾ feet in diameter, laid in a timber trench filled with concrete. The maintenance cost of the works per acre irrigated was the lowest in India, *viz.*, Rs. 0·12. As has been truly said, this one work has probably done more in ten years to still the turbulence of a quarrelsome frontier tribe than all the police of the province could have done in half a century.

AJMERE-MERWARA.

All the tanks were made or restored in 1850 by Colonels Hall and Dixon. The useful rivers do not run dry, but the tanks maintain the levels in the wells near them. These irrigate from 44,000 to 108,000 acres according to the season. No extension of the works is practicable.

Private works are numerous and use perennial storm and flood waters. *Kharag* or underground channels are peculiar to the district. They tap the subsoil water of high grounds and bring it through the hills to the lower grounds. They are all constructed by private individuals and show great skill in their execution. The Zhera Karez is 5,000 feet long, 36 inches high and 20 inches broad with a gradient of 1 in 33; it discharges 9 c. feet per second.

On the *Minor Revenue Works* the Net Revenue Receipts were Rs. 18,69,893; the charges being 56·45 per cent. of the Gross Revenue.

The works irrigated 187,255 acres with a mileage in operation of 273; at a capital cost of Rs. 48,01,772; the total Net Revenue being Rs. 84,36,573.

The Minor Capital Works irrigated 20,890 acres at a cost of Rs. 31,69,936, the percentage of Net Revenue being 3·35 and the total Revenue account Rs. 15,87,557.

RAJPUTANA.

Minor Capital Works.

Name of Tanks.	Ajmere Sub-Collectorate.	Beawar Sub-Collectorate.	Todgarh Sub-Collectorate.
Acres Irrigated	11,220	6,700	2,970
Capital Cost Rs.	17,64,826	9,45,543	4,59,567
Percentage of Net Receipts ...	2·54	4·01	5·15
Total Net Profit Rs. ...	8,46,240	4,41,626	2,99,691

These were nearly all treated as "Imperial."

There are many old tanks in this province, most of which are now abandoned: the Udaipur Lake, said to be the largest in India, is not now used for irrigation.

BALUCHISTAN.

Minor Capital Works.

These were nearly all treated as "Imperial."

Name of Work.	Khudhil Khan Reservoir.	Shebo Canal.	Anamber Channel.
Acres Irrigated	6,449	2,329	.....
Miles in Operation	22	25	.....
Capital Cost Rs.	10,21,117	6,77,231	40,775
Percentage of Net Receipts ...	4·04	0·8	.....
Total Net Profit Rs. ...	1,33,078	94,910	.....

The Minor Capital works irrigated 8,778 acres, with 47 miles in operation. The Capital Outlay has been Rs. 17,52,123; the Net Revenue, 2·67 per cent., and the total Net Revenue, Rs. 2,27,988.

There is little scope left for State irrigation works besides those in the Quetta-Pishin district.

IRRIGATION COMMISSION, 1901-03.

Under the Presidency of Sir Colin Scott Moncrieff, a Commission went into the whole question of Irrigation in India most thoroughly, and in the report the manner of assessment is stated in full detail.

The following figures are abstracted from the very valuable report. In this table now given, the figures are exclusive of large areas flooded by river, or saturated by rain-water impounded in natural depressions and in shallow tanks.

In all India (exclusive of the Native States), the population in 1901 was 218,963,000; the average area under cultivation was 226,064,000 acres, of which

Sources of Irrigation.	State Works. Acres.	Private Works. Acres.	Total acres.
Wells	.....	12,895,000	12,895,000
Canals	15,644,000	1,235,000	16,879,000
Tanks	2,944,000	5,194,000	8,138,000
Other Sources	.....	6,186,000	6,186,000
Totals	18,588,000	25,510,000	44,098,000

44,098,000 acres or 19½ per cent. were ordinarily irrigated from all sources, but this latter figure varies considerably—in very dry seasons, the tanks fail and the perennial canals are worked to their maximum.

NATIVE STATES.

The Commission then procured figures from all the important Native States (except Burma and Baluchistan) which are summarised below. The population was 51,326,000; the total area of the States being 438,000 square miles, of which the average cultivated area was estimated at 71,076,000 acres, of which 7,763,000 or 10·64 per cent. were ordinarily irrigated. The Commission estimated the total area annually irrigated in Burma and Baluchistan at 53 million acres, of which 19 are from canals, 16 from wells, 10 from tanks and 8 from other sources.

HEAD REGULATOR, MANDALAY CANAL, BURMA.

MYSORE.

In this State there are 39,000 tanks, or four to every three square miles, constructed in chains on the slopes, and overflowing into each other down to the terminal one. If a breach occurs in the top one, it generally causes all the others to be breached also. The largest tank holds 3,118 million cubic feet; 10 hold 270; not more than 2,300 irrigated 80 acres or more. The total irrigated area is 540,000 acres; 1,000 miles of canals or river channels serve 100,000 acres, and wells about 70,000 acres. Two large tanks were under construction: the Bora Kanave to hold 2,354 million c. feet and the Mari Kanave to hold 30,000 million. This latter is on the Vedavati or Hagari River (which is a tributary of the Tungabhadra) in the Chitaldroog district. The catchment area is 2,075 square miles; with an average rainfall of 23½ inches; the dam is 1,185 feet long and is 142 feet high, giving a water spread of 40 square miles which is equal to the Assuan Reservoir; but the lake will probably fill only once in 30 years—the average capacity is 10,000 million cubic feet. The sluices for drawing water off will be fitted with Stoney's roller gates to carry 1,047 c. feet of water with a 10 feet head; the maximum head being 80 feet. It is hoped it will irrigate 45,000 acres and the estimate is about 40 lakhs. During the famine in 1876-77 one-third of the population died—in one part of this tract.

HYDERABAD.

The area irrigated is generally, 773,000 acres, but in a dry year like 1899-1900 it drops to half this amount. There are said to be 18,000 tanks, the largest of which holds 300 millions cubic feet; some of these are very old and most of them were useless until recently. Since 1893 some 7,000 have been restored and projects for others are prepared. Some small canals take off from the left bank of the Tungabhadra, irrigating nearly 4,000 acres. The Manjera Canal Project, now called the Myboob, is completed and will irrigate 10,000 acres.

BOMBAY, INCLUDING BARODA.

The area irrigated in ordinary years amounts to 1,147,000 acres or less than 5 per cent. of the area cultivated.

RAJPUTANA.

The rainfall is uncertain and storage sites are difficult to find, also territorial difficulties are so great that all other sources of the water-supply have to be utilized, so irrigation, which is very precarious, is most important. In great rains, 1,170,000 acres are irrigated, being 18 per cent. of the cultivated area, from wells and tanks. Jaipur, Bharatpur, Shahpura and Kishangarh are best protected. Jaipur, in the last 30 years and under the advice of Colonel Sir Swinton Jacob, has constructed many irrigation tanks, and made liberal advances for wells. The Ramgarh Dam is a bold but successful work. It is constructed of drift sand, covered with 18 inches of broken stone; it is 1,080 feet long, 90 feet high and from 30 feet to 570 feet wide. It has a core wall of sand and clay, 20 feet thick at bottom; with a 1 in 12 batter, and carried 10 feet into the bed of the river. It is expected that water will percolate along the bed of the dam—this is termed "seepage," and it will be allowed to run out through broken stone at the foot of the outer slope. Bharatpur spent 10 lakhs in four years, mostly on impounding reservoirs and in distributing the spill waters of the Banganga and other rivers, thereby increasing the irrigated area by 50,000 acres.

CENTRAL INDIA.

The area irrigated from all sources is less than 6 per cent. of the average area cultivated; many tracts are liable to severe droughts.

BHAWALPUR.

The inundation canals irrigate two million acres and take off from the left bank of the Sutlej.

The Commission reported in April in 1903, that the field for Productive works was restricted, but that it should be covered as soon as possible, *viz.*, in the Punjab, Sind and part of Madras, so as to increase the food supply from parts not liable to famine: that Protective Works where most required, *viz.*, in the Bombay and Madras Deccan, in the Central Provinces and Bundelkhund, could not do more than pay their working expenses, but that this would reduce the cost and mitigate the intensity of famines. They recommended that storage works, like Lakes Fife and Whiting, should be constructed in the Bombay Deccan where rainfall had never failed; that Protective Works in the rice-growing districts of the Central Provinces, the Ken Canal Project in Bundelkhund, and storage works on its rivers should be started. Also that investigations should be made into the conditions in the Rajputana and Kathiawar States and in the Central Provinces.

The Commissioners prepared a rough programme of new Major Works costing 44 crores to irrigate 6½ million acres. This would impose a yearly burden of nearly 74 lakhs on the State, but would save 31 lakhs in famine work, so that the net charge would be 43 lakhs—this would represent the price of protection from famine and of other indirect advantages. The area protected by private irrigation works being actually greater than that by State works, the former should be encouraged by a more liberal and elastic system of Government loans, by grants-in-aid in famine tracts and by other means. India cannot be entirely protected from famines by irrigation alone, and all the works proposed would not intercept more than 2½ per cent. of the water flowing to waste in the sea.

These recommendations are all under consideration and the annual revenue allotment which was one crore from 1900 to 1904 was raised to 1¼ crore in 1904-05. At this rate it will take a considerable time to carry out the Commission's programme.

It has truly been said that "the smallness in the difference of prices in all parts of the country during the famines that have occurred since 1896 is the best justification of the policy of Railway extension (*pari passu* with the extension of irrigation) as an alleviation of famine."

BIOGRAPHICAL SECTION.

His Excellency Sir George Sydenham Clarke, G.C.M.G., G.C.I.E., F.R.S.,

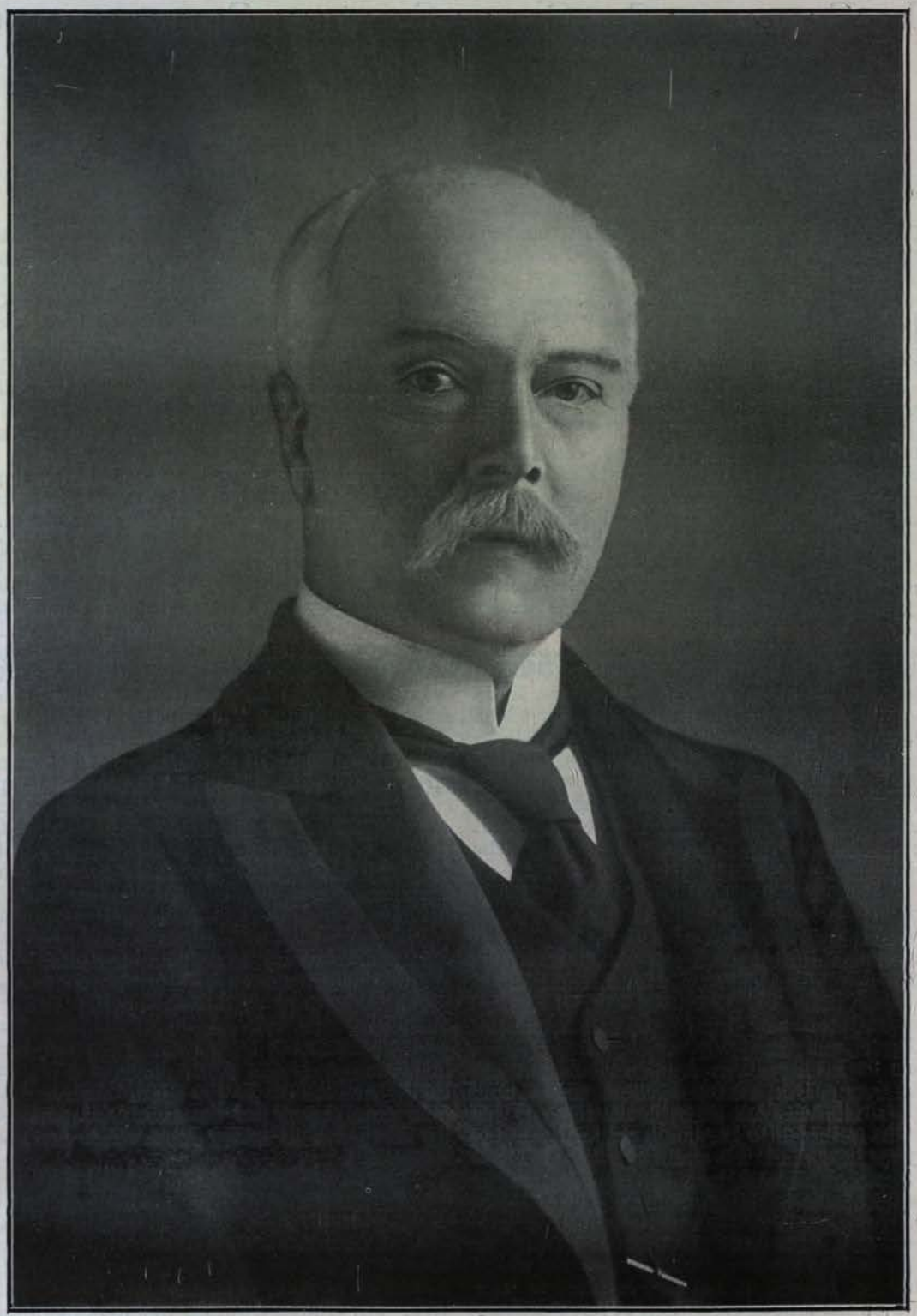
Governor of Bombay.

SIR GEORGE SYDENHAM CLARKE, G.C.M.G., G.C.I.E., F.R.S., who succeeded Lord Lamington in 1907 in the Governorship of the Bombay Presidency, is the son of the Rev. W. J. Clarke, of Knoyle House, Folkestone. He was born on the 4th July, 1848, at Swinderby, Lincolnshire, of which parish his father was at that time the Vicar. He began his education at the old school at Repton, continuing at Rossall, whence he went on to Haileybury. Later on he underwent a special course of Mathematics at Wimbledon School, passing first in the open competition for Woolwich in 1866. In June, 1868, he passed first out of the Academy, gaining the much-coveted Pollock medal—the greatest distinction for all studies—in addition to seven other prizes. In the following month he received a commission in the Royal Engineers, and, at the age of twenty, began a life of scientific soldiering with two years' work at Chatham and a year's service at Aldershot. Here it was that an accidental meeting with the late Sir George Chesney, who was then organising the staff of the new Royal Engineering College at Cooper's Hill, led to his appointment as Instructor in engineering drawing at that institution, a post which he held from 1871 to 1880. During this period he found time for extended study and research, and he wrote several scientific works, which are now used as text-books. Of the books which he published during his connection with Cooper's Hill, the best known is "Plevna: a study of the Russo-Turkish War," the others being more technical. He also became an Examiner to the Science and Art Department at South Kensington, a post which he held for some years.

On promotion to the rank of Captain in 1880, he resigned his appointment at Cooper's Hill, receiving the thanks of the India Office. He was then sent to Bermuda, and later to Gibraltar, where he was employed on fortifications. In 1882, he volunteered for service in Egypt, and was despatched at short notice to report on the results of the bombardment of Alexandria. He took part in several reconnaissances, and reached Tel-el-Kebir one day after the battle. At the end of 1882 he returned to England, and early in the following year he joined the staff of the Inspector-General of Fortifications, and took an active part, under Sir Andrew Clarke, in designing the new defences of the Empire which arose out of the report of Lord Carnarvon's Commission. His activity was not confined to his own branch of the services, for the experience which he had gained at Alexandria not only led him to take strong views on the altered conditions of fortifications, but caused him to study the whole question of Imperial defence, more especially in relation to the Navy. In 1885 he took part in the Soudan Expedition as Deputy Assistant Adjutant and Quarter-Master-General, and was mentioned in despatches. On his return to England, after the Soudan Campaign, Captain Clarke became Secretary to the Colonial Defence Committee, which sat from 1885 to 1892, and marked the first important step towards national recognition of the great responsibilities arising out of expansion of the Empire, and of the great resources available for discharging them. During this period he was employed on a number of missions of a special nature, having connection with gunnery and engineering works, and in the course of his duties he visited Sweden, Lintz, Berlin, Paris, Magdeburg, the United States, Canada, Malta, Gibraltar, Bukarest, and many other places. In 1887 he was made a C. M. G., and in the following year was appointed Secretary of the Royal Commission on the Administration of the Admiralty and War Office, presided over by Lord Hartington, a Commission which did much to promote closer and more cordial co-operation between the two services. Meanwhile, his literary activity continued unabated, and he wrote several valuable papers on naval and military subjects. In 1890 he published "Fortification: Past, Present and Future," a book that has exercised a marked influence upon the science of fortifications at home and abroad, and which was adopted as a text-book in Japan.

After serving at Malta as Second-in-Command of the Engineers, and becoming a Lieutenant-Colonel in 1894, he was appointed Superintendent of the Royal Gun Carriage Factory at Woolwich, and here he proposed and carried out great changes in the mounting of guns for coast defence, took out several important patents, which have been assigned to the Secretary of State for War, and devised and perfected an automatic sight which was adopted into the service and had an important effect in increasing the power of coast artillery. The best known of his inventions are, the spade-attachment for checking the recoil of the old field-guns, a device which enabled a high rate of fire to be maintained in the South African War; and a new arrangement for the storage of power developed by the recoil of heavy guns, which has proved very successful.

Sir G. S. Clarke—he had been knighted in 1893—remained as Superintendent of the Royal Gun Carriage Factory until 1901, when he accepted the Governorship of Victoria. Before he accepted that post, he had been engaged on a Committee, appointed by Mr. Broderick in 1900, to enquire into War Office organisation. Mr. Clinton Dawkins was the Chairman, and the Committee was a strong one, and issued a report of a very drastic character. Sir G. S. Clarke was recalled from Australia by Mr. Balfour in 1904, and was



His Excellency Sir GEORGE SYDENHAM CLARKE, G.C.M.G., G.C.I.E., F.R.S.,
Governor of Bombay.

one of the Committee of three—the other members being Lord Esher and Sir John Fisher—appointed by Mr. Arnold Forster to enquire into the administration of the War Office. One of the many important suggestions of these Commissioners was that a body should be provided "capable of obtaining and collating, for the use of the Cabinet, all the information and expert advice required for shaping the national policy in war, and determining the necessary preparations in peace." In 1905 the Committee of Imperial Defence was formed, and the admission to it of a Colonial element, anticipated in the previous autumn by the invitation to its deliberations of the Canadian War Minister, was specially commended. Sir George S. Clarke was appointed Secretary of the Committee, a post which he continued to hold up to the date of his present appointment. He received a G.C.M.G. in 1905, and in 1906 he became a member of the Committee on National Insurance of Shipping during war.

In July, 1907, Sir George Sydenham Clarke was appointed to the Governorship of Bombay, an appointment that was received with general approval. He arrived in Bombay and assumed the Governorship on the 18th October the same year, and on the day of his arrival he was made a G.C.I.E. Coming to India with a ripe experience in political matters and an already well-established reputation as a statesman of no ordinary merit, he received a warm welcome from those over whom he had come to rule, and in his reply to the address of the Bombay Chamber of Commerce, presented on his arrival, he displayed a sympathetic attitude towards the commercial problems of the City and the Presidency that was grateful to those chiefly concerned. He has since identified himself with the many projects afoot for the relief of the immediate needs of the city. The greatest of these is, perhaps, the congestion caused by overcrowding, and the necessity that exists for the provision of accommodation for the poorer classes of Bombay, upon whom the existing high rents are a growing burden. This problem was the first to receive the attention of the new Governor, and he has set himself to solve the difficulty with characteristic energy. While recognising the good work already carried out by the Corporation and the Improvement Trust, Sir George Clarke looks upon it as an indication of the greater work still to be accomplished, and with this end in view, he proposes to lay down a programme, extending over some years, and to deal with the problems with which the city is confronted, in the order of their urgency and importance. Of his administration it is too early as yet to say more than that he has made a good beginning, and that he has early recognised the fact that the old order is changing, and that a combination of causes is producing certain inevitable effects. It augurs well for the people under his rule that Sir George has also recognised that it is incumbent upon those placed in positions of power to so direct these new forces that they will find their outlet in channels which will carry prosperity and progress to the people.

Already, too, the Governor has had some measure of success in his efforts to bridge over the gulf that exists between Europeans and Indians in the Bombay Presidency, as elsewhere. While impressing upon the malcontents that seditious movements will be dealt with in a severe manner, he has held out the olive branch by an invitation to the native papers to aid in the difficult work of administration, and to endeavour to help the Government in its task, instead of obstructing it. One direct result of this appeal has been that, for the first time in history, a large number of editors of native papers have been brought together under one roof with the object of having the plague operations explained to them; and have gone away convinced as to the efficacy of the methods pursued, although up to that time they had been bitterly opposed to inoculation. This is a notable change of front, that may have far-reaching results.

Sir George Clarke was married, in 1871, to Caroline Emily, daughter of General Peregrine H. Fellowes, and has one daughter. His recreations are music and painting, and he is an accomplished violincellist.

LORD LAMINGTON, G.C.M.G., G.C.I.E., F.R.G.S.,
Ex-Governor of Bombay

Charles Wallace Alexander Napier Cochrane-Baillie, Lord Lamington, G.C.M.G., G.C.I.E., F.R.G.S.,

Ex-Governor of Bombay.

CHARLES WALLACE ALEXANDER NAPIER COCHRANE-BAILLIE, LORD LAMINGTON, who resigned the Governorship of Bombay in July, 1907, comes of an energetic race, and was welcomed on his arrival in India as the illustrious scion of an illustrious family. Whilst the grandson of the Admiral of the Fleet, Sir John Cochrane, would be heartily welcomed by a maritime people, the son of Cochrane-Baill e recalls pleasant memories in the minds of politicians and of men of letters of the Disraeli age of politics. When Disraeli first formed his "Young England" party, Cochrane-Baillie was one of his most active supporters—and after over 40 years of stress and strain in the House of Commons, Cochrane-Baillie, under the title of Lord Lamington, entered that haven of political repose—the House of Lords.

In the year 1860 whilst his illustrious father occupied the seat for Honiton in the House of Commons, Charles Wallace Cochrane-Baillie was born; he was educated at Eton and Christ Church, Oxford, the joint nurseries of so many of our political leaders. He was in the fourth class of the modern history school in 1880, and graduated B.A. in 1881. Lord Salisbury was never the man to forget the claims of an old colleague, and thus we find that Lord Lamington made his *début* in public life in 1885 as an assistant private secretary to Lord Salisbury. In 1886 he entered the House of Commons as the representative of North St. Pancras, a position which he held until his accession to the House of Lords upon the death of his father in 1890. In 1895 he was appointed Governor of Queensland.

The physical difficulties of Queensland presented as great a problem to the new Governor as did its political conditions. A great drought had for seven years devastated the country to such an extent that in some parts of the great west there were to be found children who had never seen a drop of rain. To personally understand the character of this disaster, and to seek, if possible, for some means of physical alleviation, Lord Lamington set out, as no other Governor had previously done, to traverse Queensland from end to end. In a country containing an area of 680,000 square miles, for the greater part parched by a prolonged drought, and but sparsely populated, this was a task involving considerable personal discomfort, if not actual physical privation. By this means Lord Lamington collected and left to his successor a knowledge of the needs of the country, of its physical resources, and of the necessities of its people, which must bear substantial fruit in years to come.

In 1903, Lord Lamington assumed charge of the Governorship of Bombay, and the high qualities of statesmanship he had already displayed in Australia found an even more extended scope in his new appointment. Among the more prominent measures that will be identified with his administration are: the restoration of the financial independence of the Presidency through the revision of the Provincial Contract; the new arrangement for financing the cost of famine relief, and the revival of irrigation projects. The Provincial Settlement, which gave a position of greater independence than heretofore to the Bombay Government, was a step in the policy of decentralization now about to be carried into effect, and consists of an estimate of standard expenditure based roughly on the estimated expenditure of the year of settlement. With regard to the Land Revenue policy of the Government, it was Lord Lamington's endeavour throughout his administration to follow a consistently liberal and elastic policy as regards both the assessment and the collection of land revenue. Great progress was made in education, owing to the liberal grants made by Government for the advancement of higher education. Personally, however, Lord Lamington was of opinion that the cost of higher education should be met by fees from the students. But apart altogether from what he accomplished in administrative measures, Lord Lamington's popularity rested on the fact that he always showed himself a sympathetic Governor. He devoted much of his time to the problem of the housing of the poorer classes and to questions relating to the sanitation of the city, the condition of the Bombay slums, and to the miserable surroundings among which tens of thousands were forced to live and work. In this good work he found a sympathetic helper in Lady Lamington, who was no less thorough than her husband. And when the serious turn taken by an illness from which her Ladyship had been suffering for some months rendered it impossible for Lord Lamington to remain longer at his post, the news of his resignation called forth expressions of regret from all sides, not only on account of the resignation itself, but also on account of the immediate cause which rendered such a step necessary. The retiring Governor left Bombay on the 27th July 1907.

Lord Lamington was married in 1895 to the Hon. Mary Haughton Hozier, youngest daughter of the first Baron Newlands, by whom he has one son and one daughter.

The Hon. Sir JOHN PRESCOTT HEWETT, K.C.S.I, C.S.I.,
Lieutenant-Governor of the U. P. of Agra and Oudh.

The Hon. Sir John Prescott Hewett, K.C.S.I., C.S.I.,

Lieutenant-Governor of the United Provinces of Agra and Oudh.

SIR JOHN PRESCOTT HEWETT, K.C.S.I., C.S.I., eldest son of the Rev. John Hewett, was born at Barham in Kent, England, on the 25th August 1854, and was educated at Winchester and at Balliol College, Oxford. Entering the Indian Civil Service. he came to this country in 1877, and in 1906 his appointment to the Lieutenant-Governorship of the United Provinces received the approval of His Majesty the King-Emperor. At the time of his appointment to this office, the Hon. Mr. Hewett was a Member of the Governor-General's Council, in charge of the Department of Commerce and Industry, and a sketch of his Indian career up to this point was published in Vol. I of the Cyclopedia of India. The new Department of Commerce and Industry came into being at the beginning of 1905, and Mr. Hewett, who had been for some months previously acting as a temporary Member of the Council, was in December 1904 appointed an Ordinary Member to the Council in charge of the new Department. The constitution of the new Portfolio involved a great change in the work of the Supreme Council, for it meant not merely the addition of a sixth Member to that Council, but also a redistribution of the duties of the other Members. The chief advantage derived from the establishment of the new Department, which was entirely due to the initiative of Lord Curzon, was the substitution of a practical commercial bureau for the somewhat unpractical and extremely official agencies that had previously dealt with commerce and trade. It also served to some extent to bridge the gulf that lay between private enterprise and bureaucratic indifference.

On the 1st January, 1907, the Hon. Mr. Hewett, as Lieutenant-Governor designate of the United Provinces, was made a Knight Commander of the Star of India, and he shortly afterwards took up the duties of his new office. In the first year of his administration he was confronted with the necessity for providing on a large scale against famine conditions in the provinces under his rule. In the course of 1907, the number of those in receipt of famine relief rose from less than 1,000 to nearly 300,000; and in March 1908, there were upwards of a million persons employed on relief works, and nearly 400,000 in receipt of gratuitous relief. The injury sustained by the crops up to the beginning of 1908 was greater than that incurred in the big famine of 1896-1897. Whereas the normal outturn of food-crops should have been about five millions of tons, the estimated outturn at the beginning of 1908 for the year 1907-1908 was between one and a half and two millions only. A Relief Fund was inaugurated by Sir John Hewett in January 1908, the objects of which were to supplement Government relief by providing blankets, clothes and other comforts; to provide for the orphans, to afford relief to respectable persons by money allowances to poor widows and others to prevent starvation, to establish cheap grain shops, and to prevent the cultivator, the weaver, and the artisan from being submerged by their losses in famine time. The Lieutenant-Governor's sympathetic attitude, it is well to note, met with prompt and hearty support, and has been the means of alleviating much distress.

Other important features that have marked Sir John Hewett's rule up to the present have been the interest he has displayed in educational work generally, and his insistence on the necessity for the education of skilled labour for all Indian industries. He holds that there is a close connection between education and the progress of industries and trade, and that the backwardness of India in these latter is largely due to a non-recognition of this fact. He is taking practical steps to secure for the United Provinces a scheme of general education, which shall be so arranged that, without any break of continuity, it shall lead up to technical instruction. As regards Higher Education, he looks upon the extension of the Hostel system as a hopeful sign that Indian parents are realising its value as a factor in the formation of character, while with regard to Secondary Education. he is resolved that it shall be strengthened, so as to improve the quality of the students who aspire to the University curriculum. These are among the educational reforms which he purposes to carry out.

Sir John Hewett was married in 1879 to Ethel Charlotte, the second daughter of Henry Binny Webster, B.C.S. He is keen on cricket and is a first-rate shot.

The Hon. Sir LOUIS WILLIAM DANE, K.C.I.E., C.S.I.,
Lieutenant-Governor of the Punjab.

THE HON. SIR LOUIS WILLIAM DANE, K.C.I.E., C.S.I.,

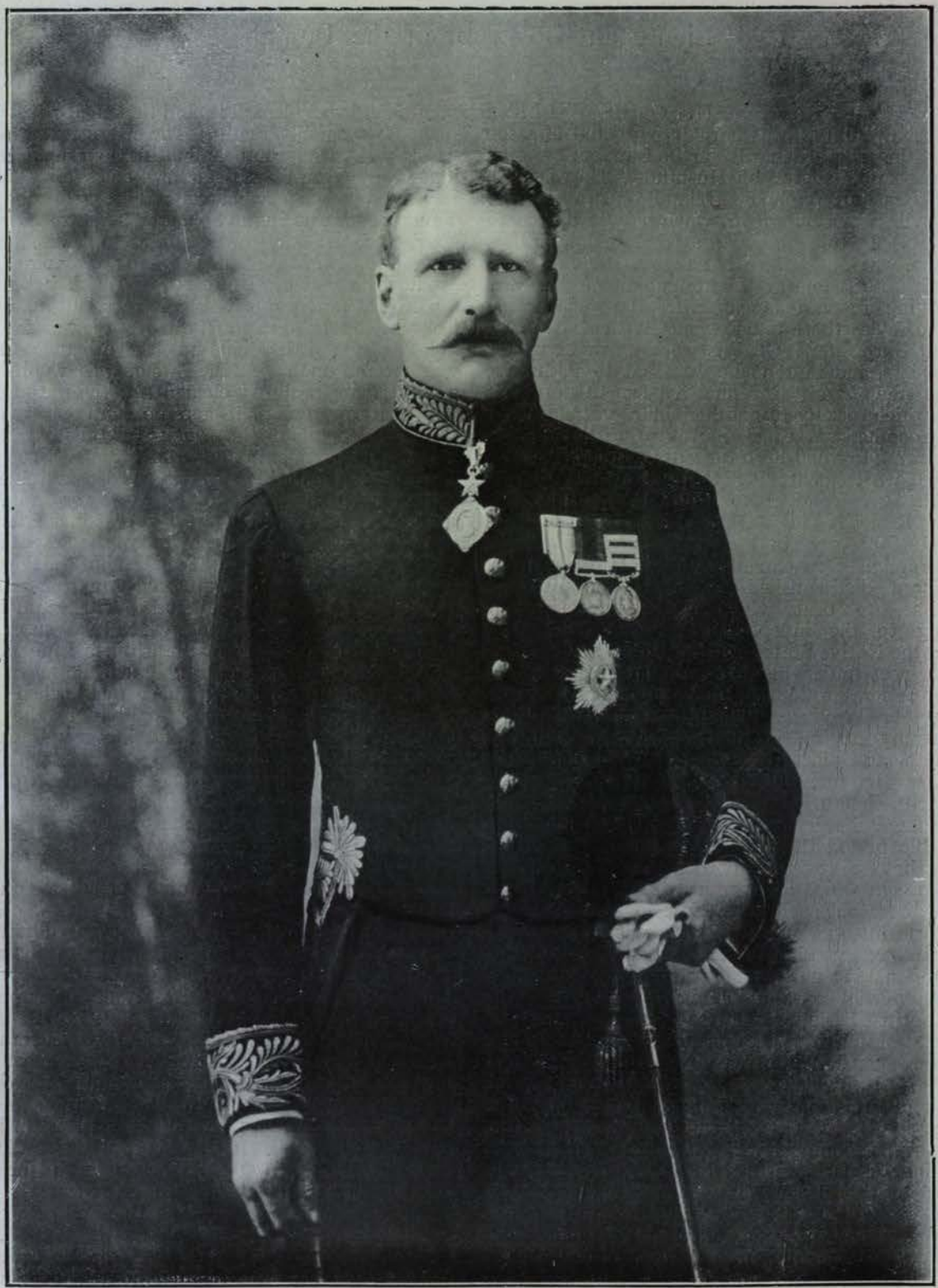
Lieutenant-Governor of the Punjab.

THE HONOURABLE SIR LOUIS WILLIAM DANE, K.C.I.E., was born in 1856, and is a son of the late Richard Martin Dane, M.D., C.B., Inspector-General of Hospitals. He was educated at Kingstown School, Ireland, and entered the Indian Civil Service in 1876, when he was posted to the Punjab. In this Province the whole of his service, up to 1900, was put in. From 1879 to 1882 he was Private Secretary to the Lieutenant-Governor, and after serving in various capacities, he was selected in 1887 to revise the Land Revenue Settlement of the District of Gurdaspur. On this work he was engaged for five years, and in 1892 he was sent to Peshawar, to revise the Land Revenue Settlement of that district, which occupied another four years. From 1896 to 1900 he was Chief Secretary to the Punjab Government. In 1900 he returned to Ireland, where he served as Resident Magistrate at Tralee, County Kerry, but was recalled to India in the following year as Resident in Kashmir. In 1902 he was appointed Secretary to the Government of India in the Foreign Department, and in this capacity he rendered distinguished service. The Foreign Office has to deal with many diverse affairs pertaining to the independent States bordering on India, the Native States within India, and several large Provinces under the direct administration of the Governor-General in Council, including the new North-West Frontier Province. The formation of this Province, whereby the frontier districts were severed from the Punjab, and placed under a separate administration under the immediate control of the Supreme Government, had only just been completed when Mr. Dane assumed charge of the Foreign Office, and for a considerable period the new arrangements worked so well that the tribes over the border gave little anxiety to the Foreign Office authorities. Afghanistan, however, was, as usual, well to the fore in Lord Curzon's time, and in his opinion it was necessary that a Mission should be despatched to Kabul in 1904, not for the purpose of making new arrangements with the Amir, but with a view of consolidating existing treaties. The conduct of this Mission was entrusted to Mr. Dane, and on the 21st March 1905, he, on behalf of the Indian Government, concluded a treaty with the Amir Habibullah Khan, by which the Amir undertook to be guided in his relations with Foreign Powers by the advice of the British Government, and, in return, the integrity of his dominions was guaranteed. A number of sensational reports were set in circulation regarding the objects of this Mission, but the startling proposals with which the Mission was credited found no place in the programme with which Mr. Dane was entrusted, and his duty was, mainly, to talk over Anglo-Afghan relations with the Amir, and to ascertain his views with regard to the fulfilment of the obligations contained in the agreement with his father, the late Amir. The Amir was quite willing to renew the old arrangements, and was pleased to find that the British Government were equally ready. The arrangements entered upon by Mr. Dane, on behalf of his Government, formed a good and entirely satisfactory basis for subsequent relations, and no new policy on the part of the British Government was involved. For his services with the Mission, Mr. Dane, on his return to India, was made a Knight Commander of the Indian Empire.

The history of our troubles with the Tibetans covers a period of nearly one hundred years, but matters were brought to a head in 1903, when, in view of the intractable attitude of the Tibetans, the advance to Lhasa was decided upon. As the Mission was a political one, with a strong military element for the purpose of enforcing the arguments if more peaceful measures failed, the arrangements of the principal details fell upon the Foreign Department, and from January 1903, when Lord Curzon made his strongly worded and final representations to the Secretary of State for India on the serious questions arising out of recent incidents in connexion with Tibet, up to the date of the despatch of the Mission to Kabul, Mr. Dane, as head of the Foreign Department, was mainly occupied with matters relating to the political side of the Mission to Tibet, and with the details of the Convention which was subsequently signed, in the presence of the Chinese Amban, on the 7th September, 1904. The final stage, however, was not reached until the end of January 1908, when Tsarong Shape, the Tibetan Envoy, paid in to the Foreign Office at Calcutta, the third and final instalment of the Tibetan indemnity for the campaign; upon which orders were issued by the Government of India to proceed with the evacuation of the Chumbi Valley which we had been occupying since the outbreak of hostilities, as security.

In January 1908, Sir Louis Dane was appointed Lieutenant Governor of the Punjab, in succession to the late Sir Denzil Ibbetson. Urgent affairs, chiefly in connexion with frontier troubles, prevented him from at once taking up the new appointment; and it is now well known that the despatch of the punitive expedition against the Zakka Khels was only decided upon when the more peaceful efforts of the Political Department had failed. This, together with the Tibetan settlement and the Investiture held at Government House, kept Sir Louis Dane in Calcutta until March. The Investiture of the Orders of the Star of India and of the Indian Empire, held by Lord Minto on the 28th January 1908, was the largest that had been witnessed for many years, and Sir Louis Dane, as Secretary to the Orders, was largely responsible for the arrangements. Early in March he took short leave to England before taking up the Lieutenant-Governorship of the Punjab.

Sir Louis Dane was married in 1882 to Edith, third daughter of the late Lieutenant-General Sir F. B. Norman, K.C.B., by whom he has two sons and three daughters. He is keen on golf, and is fond of shooting.



Honourable Lieut.-Col. Sir HAROLD ARTHUR DEANE, K.C.S.I.,
Agent to the Governor-General, and Chief Commissioner, North-West Frontier Province.

HONOURABLE LIEUT.-COL. SIR HAROLD ARTHUR DEANE, K C.S.I.,

Agent to the Governor-General, and Chief Commissioner, North-West Frontier Province.

SIR HAROLD ARTHUR DEANE is the son of the Rev. Henry Deane, late Rector of Hintlesham, Suffolk, and was born in 1854. He was educated at first privately, and later at the Ipswich Grammar School. In 1874 he entered the Army, and was attached to the 54th Foot until, three years later, he joined the Indian Staff Corps. In the Afghan War, 1879-80, he served with the 1st Punjab Cavalry, and was present at the action at Ahmed Khel on the 19th April, 1880, for which he was mentioned in despatches and received the medal and clasp. At the close of the war he was posted to the Andamans and Nicobars as District Superintendent of Police, and here he remained until 1885, when he entered the Punjab Commission, serving first as Assistant Commissioner and subsequently as Deputy Commissioner until 1895, when he was appointed Chief Political Officer with the Chitral Relief Force. Following two successful actions, the relief of the Chitral garrison was accomplished by the force under Colonel Kelly, which entered the Chitral Fort without opposition on the 20th April, 1895. For his services with the Relief Force, Major Deane was decorated, and when, in October, 1895, the force was withdrawn, he remained at the Malakand as Political Agent for Dir, Swat and Chitral. He served throughout the Indian Frontier disturbances in 1897, for which he received the medal and two clasps, and in 1900 he was appointed Political Resident in Cashmere.

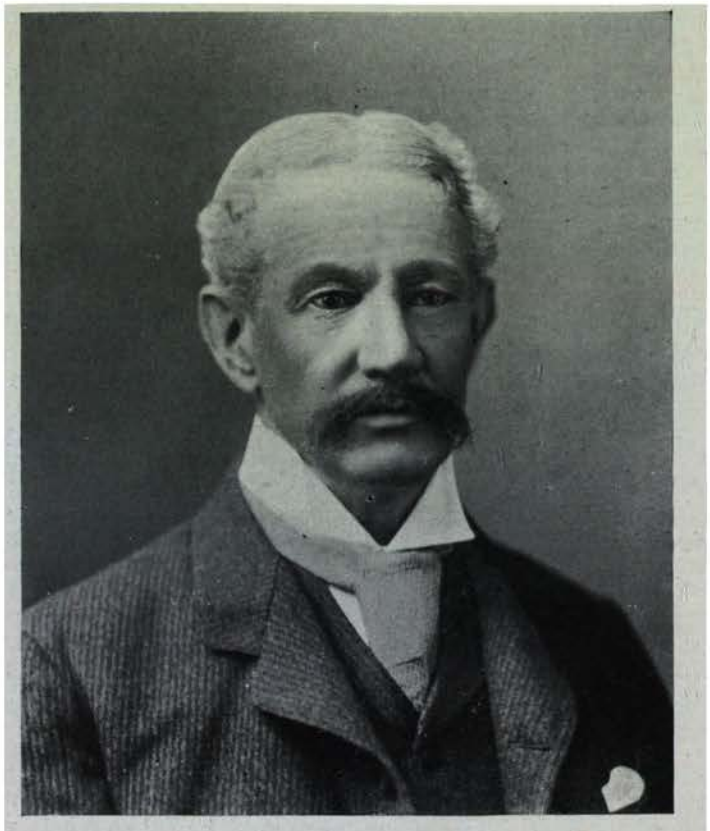
On the formation of the North-West Frontier Province in 1901, Colonel Deane, as he had by then become, was selected for the post of Agent to the Governor-General, and Chief Commissioner. The Administration of the new Province was inaugurated at Peshawar on the 9th November, 1901, and the Proclamation was read in open Durbar by Colonel Deane, the first Chief Commissioner. The new Province was created out of the four trans-Indus districts of the Punjab, including the districts of Peshawar, Kohat, Bannu, and Dera Ismail Khan, with the tribal country beyond them, and the Political Agencies of Dir, Swat, the Khyber, the Kurram, Tochi, and Wana. There was thus included in the new Province not only the frontier districts, but a very considerable section of settled territory between the Indus and the hills, and the whole was brought under a strong personal non-bureaucratic rule. The principles of the new policy, which Colonel Deane was instructed to carry out, were, the withdrawal of British troops from advanced positions and the employment of tribal forces in the defence of tribal country; and the concentration of British forces in British territory behind them, as a safeguard and support. The establishment of the Frontier Province and the system of Native levies has relieved the Army of much troublesome work, and has conduced to frontier tranquillity at every point. Under the new arrangements frontier affairs are conducted with infinitely greater despatch, and, so far, with better results. The wheels of the Administration have worked smoothly under the control of Sir Harold Deane, who was made a K.C.S.I. in 1907 for his services. Up to the end of 1907, there were no tribal complications calling for the despatch of a punitive force since the new policy was initiated by Lord Curzon, and the wiser methods adopted in dealing with the wild and warlike tribes on the frontier, which had been such constant causes of anxiety in the past, were attended with the best results. Early in 1908, however, in consequence of repeated raids over the border into British territory, it became necessary to despatch a punitive expedition against the most unruly and daring of the Afridi tribes, the Zakka Khels. Warnings had had no effect, and even the usual expedient of stopping their substantial subsidy left them defiant; they cared nothing for threats and were simply spoiling for a fight. In February a force under Sir James Willcocks advanced into the Bazar Valley to punish the Zakka Khels, and the subsequent campaign, which lasted just sixteen days, enjoys the distinction of being the shortest campaign on which Great Britain has ever embarked. The Force, which was limited to two Brigades, with one in reserve, marched out of Peshawar for Ali Musjid, on its way to the Zakka Khel country, on the 13th February, and by the end of the month the troops were all back again. The Zakka Khels were severely handled, and satisfactory terms of surrender were arranged on the 28th February, by virtue of which the Afridis jointly held themselves responsible for the future good behaviour of the Zakka Khel tribes, and undertook to punish the leaders of the recent raids.

Sir Harold Deane was married, in 1880, to Mary Gertrude, daughter of Major-General John Roberts, of the Indian Staff Corps.

The Late Sir Denzil Charles Jelf Ibbetson, K.C.S.I., I.C.S.,

Late Lieutenant-Governor of the Punjab.

SIR DENZIL CHARLES JELF IBBETSON, K.C.S.I., was born at Gainsborough in 1847, and was the eldest son of the late Rev. Denzil John Holt Ibbetson. He was educated at St. Peter's College, Adelaide, South Australia, and St. John's College, Cambridge, where he took his B.A. degree and secured honours in Mathematics. He entered the Indian Civil Service in 1870, and on arrival in India was posted to the Punjab, where the early years of his service were spent. In the many important posts he was called upon to fill, he acquired a knowledge of the Province over which he was subsequently to rule, that was probably unique. After a short service in the general line, he was given charge of the Karnal Settlement, at first under the control of a senior officer, but afterwards independently. He took up his settlement work with enthusiasm, and devoted himself with the painstaking thoroughness characteristic of the man to a study of the people under his charge, and to a mastery of the work in all its details, and he gained, in the course of his task, that intimate knowledge of the Punjab peasantry which, later on, stood him in such good stead. Before the settlement had been fairly completed, he was called away to act as Census Commissioner for the Punjab. As he possessed a special fondness for sociology, folk-lore, and statistics, the census work gave unlimited scope for the indulgence of his tastes in these directions, and he produced what was generally acknowledged to be a model Census Report. It was probably the literary ability displayed in this Report that led to his selection as Editor of the Punjab Gazetteer. His work on the Gazetteer finished, he acted for a time as Director of Public Instruction, and then, returning to the regular line, he became in turn Deputy Commissioner of Gujranwala and Lahore, and afterwards officiated as Commissioner of the Jullundur Division, which was a course of employment that did not allow him to lose touch with the practical work of the administration. As a district officer he set a high standard of duty before his subordinates, and insisted that they should work up to it. From the officiating Commissionership he was transferred to the Government of India, as Secretary in the Revenue and Agricultural Department. He was next Chief Commissioner of the Central Provinces and thence returned to Simla as a Member of the Viceregal Council. He also held important appointments on a number of official bodies. He was a member of the Deccan Agriculturists Relief Commission, a member of the Irrigation Commission, and President of the Contagious Diseases Commission. The Knight Commandership of the Star of India was conferred on him in 1903, and in March 1907 he was appointed Lieutenant-Governor of the Punjab, in succession to Sir Charles Montgomery Rivaz, K.C.S.I. In this appointment he proved himself a strong, able, and masterful official. The year during the greater part of which he held the reins of office was an eventful one in the Punjab, which, in common with other parts of the country, was affected by the prevailing unrest, and the machinations of the extremists. After the stormy period following on the Canal Colony Act and the deportation of Lajpat Rai and Ajit Singh, Sir Denzil had an attack of illness which necessitated short leave to England, where an operation was performed. On his return to India he once more took up the reins of office, but the strain proved too great for an already undermined constitution, and in the early part of January 1908, after holding the Lieutenant-Governorship for less than a year, he was forced to resign his appointment. His resignation was accepted by the Government of India, with effect from the 22nd January 1908. He left Bombay for England on the 24th January, and died on the 22nd of the following month, shortly after reaching London. The immediate cause of his death was cancer in the mouth.



THE LATE SIR DENZIL CHARLES JELF IBBETSON, K.C.S.I., I.C.S., Late Lieutenant-Governor of the Punjab.

Sir Denzil Ibbetson was married in 1870 to Louisa Clarissa, daughter of the late Samuel Coulden, by whom he had two daughters.

Hon. Sir Lawrence Hugh Jenkins, Kt., K.C.I.E., Bar.-at-Law, B.A. (Oxon.),

Ex-Chief Justice of Bombay.

HON'BLE SIR LAWRENCE HUGH JENKINS, KT., K.C.I.E., Bar.-at-Law, B.A. (Oxon.), late Chief Justice of the High Court of Judicature, Bombay, was born in 1858, the son of Mr. Richard D. Jenkins, Justice of the Peace, of Cilbronau, Cardigan. He was called to the Bar in Lincoln's Inn, in 1883. After practising as a barrister, he accepted the appointment of Judge of the High Court, Calcutta. Three years later, in 1899, he was appointed Chief Justice of Bombay and received the honour of Knighthood. In 1903, he was created a Knight Commander of the Indian Empire. He was Colonel Commanding the Calcutta Volunteer Rifles for about three years.

HON. SIR LAWRENCE HUGH JENKINS, KT., K.C.I.E., Bar.-at-Law, B.A. (Oxon.), Ex-Chief Justice of Bombay.

In both the Capitals of Eastern and Western India Sir Lawrence Jenkins earned the confidence of all classes of the community, as a sound lawyer. As a public speaker, he is fully endowed with the Welshman's characteristic power of oratory. In the responsible and onerous post of Colonel Commandant, first of the old Presidency Rifle Battalion (Calcutta), and later of the amalgamated corps of Calcutta Volunteer Rifles, Sir Lawrence showed his versatility by proving himself a ready master of drill, while his warm qualities of heart as a leader ensured a period of successful effort in the Regiment which is still well remembered Sir Lawrence's sympathy with the Volunteer Force in India was continued in the Western Presidency, where, although by virtue of the high office of Chief Justice he has not been able to be actively associated with the force, he was for several years Honorary Colonel of the Bombay Volunteer Artillery, which well-known and fine corps of Auxiliaries is actively commanded by one of his legal brethren on the High Court Bench—the Hon. Mr. Justice Russel. In February, 1908, Sir Lawrence Jenkins resigned his office of Chief Justice of Bombay, on his appointment to the Council of the Secretary of State for India; and the Hon. Mr. Justice Russel was gazetted as Acting Chief Justice, pending further orders, from the date on which the resignation took effect. A meeting of prominent and influential citizens was held on the 5th March for the purpose of giving expression to the deep sentiments of esteem, confidence, regard and affection in which the retiring Chief Justice was held by all comunities of Bombay. He left Bombay for England by the mail of the 14th March to take up his new appointment.

Sir Lawrence Jenkins was married in 1892 to Catherine Minna, second daughter of the late Andrew B. Kennedy. He is much interested in Freemasonry, and in 1904 was installed District Grand Master of the Grand Lodge of Bombay of English Freemasons.

The Honourable Sir John Stanley, KT., K.C., BAR.-AT-LAW,

Chief Justice of the High Court of the North-Western Provinces.

SIR JOHN STANLEY, who was appointed in 1901 Chief Justice of the High Court of the North-Western Provinces, which now form part of the United Provinces, is the eldest surviving son of the late John Stanley, of Armagh. He was born in November, 1846, and was educated at the Royal School of Armagh. In 1865 he matriculated at Trinity College, Dublin, and obtained a Royal Scholarship. Later on he gained various honours in Classics, and in 1868 became a Foundation Scholar of the University. At his degree examination, he secured a senior moderatorship in Classics, and a gold medal. Called to the Irish Bar in 1872, he joined the North-East Circuit, and after some years of uphill work, secured a considerable general practice, principally on the Chancery Side of the Court. In Dublin itself he had the reputation of being in the front rank of Chancery lawyers, and for some years he was Standing Counsel for the Belfast and Northern Counties Railway, and for the Belfast Banking Co. For six years he acted as Revising Barrister of the voters' list for the South Division of the County of Londonderry. In 1892 he took "silk," and in 1896 was elected a Bencher of the King's Inns. On his appointment to the Judicial Bench in India in 1898, the Benchers of the King's Inns paid him the high compliment of electing him an Honorary Member of their body.

SIR JOHN STANLEY, KT., K.C., BAR-AT-LAW.

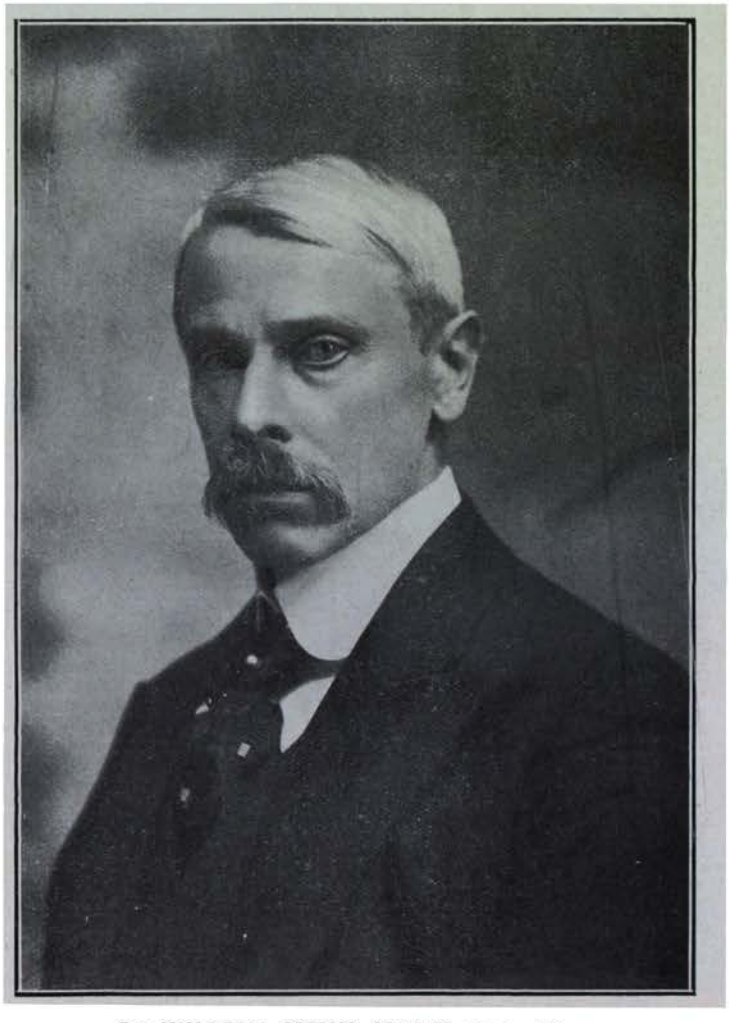
On his arrival in India in November 1898, Mr. Justice Stanley first took his seat on the Appellate Side of the High Court, Calcutta, with a senior Judge. In 1899 he first took his seat on the Original Side of the High Court. It has seldom fallen to the lot of an Indian Judge, within so short a time as that in which Mr. Justice Stanley presided in the Original Court, to decide so many important cases in the different branches of the law under the jurisdiction of that Court, *i.e.*, Original Civil (including Commercial cases), Matrimonial, Testamentary, Intestate, and Vice-Admiralty. In public affairs he, while in Calcutta, took a prominent part. He devoted much attention to the affairs of the District Charitable Society, as well as to those of the Society for the Prevention of Cruelty to Animals, and he was President of the last-named Society up to the time of his departure for Allahabad. On the 5th July 1901, he received his appointment as Chief Justice of the High Court at Allahabad, an appointment that was made on the special recommendation of His Excellency the Viceroy. He was knighted the same year.

Sir John Stanley takes a keen interest in the Volunteer movement and is Honorary Colonel of the Allahabad Volunteer Rifles. He is Dean of the Faculty of Law in the Allahabad University. Sir John was married in 1879 to the eldest daughter of the late Mr. James Norris, of Castle Hill, Blechingley, Surrey.

Sir William Ovens Clark, I.C.S., Kt.,

Chief Judge of the Chief Court of the Punjab.

SIR WILLIAM OVENS CLARK, I.C.S., KT., Chief Judge of the Chief Court of the Punjab, Lahore, was born in 1849, and is the son of the late James Jackson Clark, D.L., of Largantogher, Londonderry. He was educated at Portora School, Enniskillen, and at Trinity College, Dublin, where he took his degrees of B.A. and LL.B. He was appointed to the Indian Civil Service in 1869, and arrived in India in 1871, when he was posted to Jullundur as Assistant Commissioner. In 1874 he was employed on Famine Relief operations at Gya and Champaran, and afterwards served as Assistant Commissioner in several districts of the Punjab. From 1883 to 1889 he was Deputy Commissioner of Lahore. In 1891 he was appointed Sessions Judge at Peshawar, where he remained until 1895. In the following year he officiated as a Judge of the Chief Court of the Punjab, Lahore, and was made permanent in the post in 1898. Later on, in the same year, he was appointed Chief Judge of the Chief Court, Punjab, which position he has held ever since. Sir W. O. Clark is a Barrister-at-Law of the Inner Temple, having been called to the Bar in 1881. In 1885 he married Florence Emily, daughter of Robert Lawrie, by whom he has two sons and one daughter. He was knighted at the Delhi Durbar in 1903; and is a member of the East India United Service Club.



SIR WILLIAM OVENS CLARK, I.C.S., KT.,
Chief Judge of the Chief Court of the Punjab.

THE LATE RIGHT REV. WALTER RUTHVEN PYM, D.D.,

Late Bishop of Bombay.

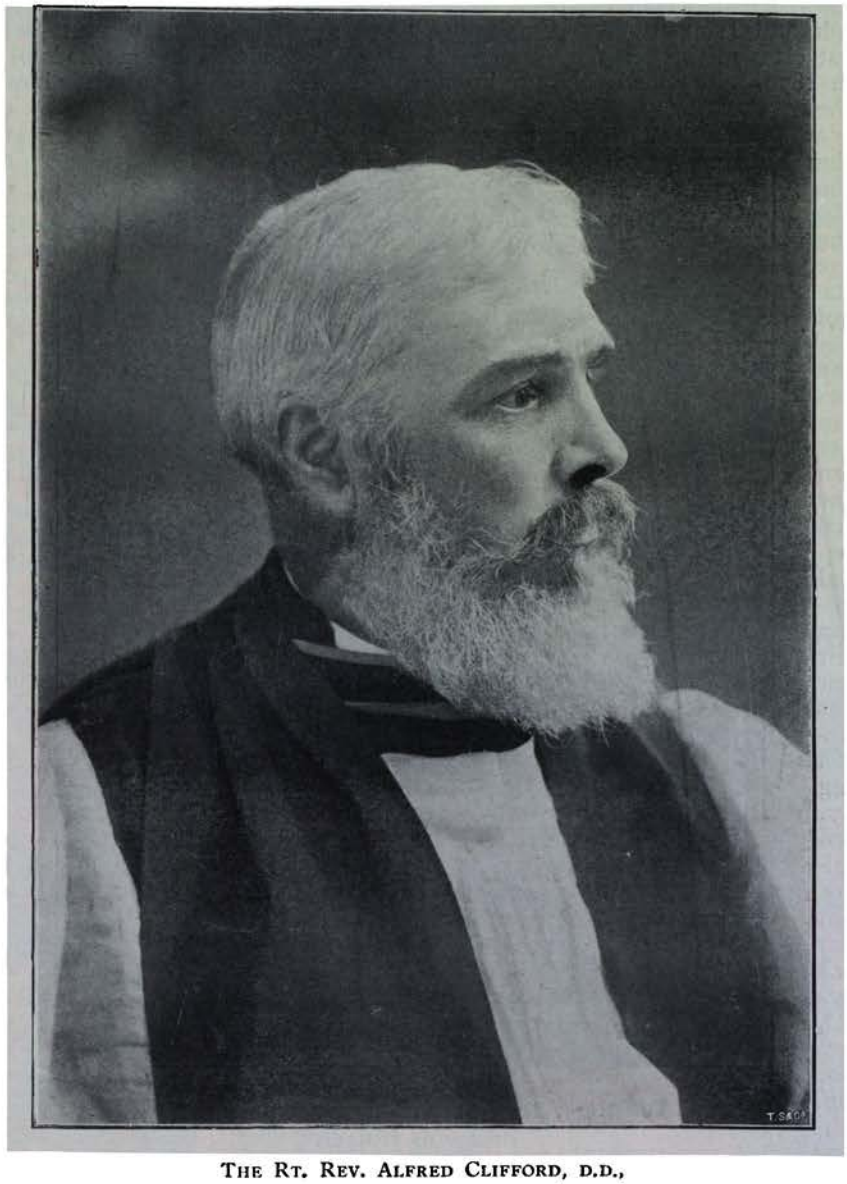
THE RIGHT REV. BISHOP PYM was the third son of Mr. Alexander Pym, J.P., and was born in 1856 at Great Chesterford in Essex. The father of Bishop Pym was a son of Mr. and Lady Jane Pym of the Hassels (Bedfordshire), and his mother was a daughter of Sir Albert and the Hon. Lady Pell. His Lordship received his early education at Bedford Grammar School, and then became a member of Magdalen College (Cambridge), from which he graduated B.A. in 1879, and took his M.A. in 1883. His Lordship's first appointment was at Lytham, where he made the acquaintance of Miss Lucy Ann Threlfall to whom he was married on the 8th of August 1883 and who died in 1904. He was next in charge at Miles Platting during the troublous time when the Rev. S. F. Greene was released from the Lancaster Gaol. This was followed by his appointment successively as Vicar of Wentworth, as Domestic Chaplain to Earl Fitzwilliam, as the Vicar of Sharrow and Vicar of Rotherham from 1893 to 1898. On the 29th of September 1898, Dr. Pym was consecrated Bishop of Mauritius, in Westminster Abbey. On taking charge of the Mauritius Diocese, Dr. Pym immediately started consolidating all ecclesiastical operations in his new sphere. In his capacity as the Bishop of the Island His Lordship energetically organized new work in the Diocese and sent a clergyman to the Island of Rodrigues, about 400 miles from the mainland, and also raised funds for a lady doctor to work among the Indian women in Mauritius. Before His Lordship came to India he had thrice visited Ceylon. Towards the end of 1903, he was appointed Bishop of Bombay and landed in the chief city of his Diocese on February 5th, 1904. Immediately after his appointment to Bombay, Bishop Pym was offered the Mastership of Magdalen College, his old college, but he declined this somewhat tempting offer, feeling himself pledged to the Diocese of Bombay, which he intended to make his sphere of work. With a view to bring the various and isolated sections of the Bombay Diocese into active and harmonious co-operation, Dr. Pym inaugurated what is known as the "Bombay Diocesan Church Society." The membership of this organization numbers in itself many very influential persons both from the clergy and the laity, and the Association has been doing excellent work along the lines it has marked out for itself. With a view to strengthen the Indian Christian Church by furnishing it with efficient ministers. His Lordship established in Poona, under his own roof, a small "Training College for Indian Clergy," and the Bishop and several of the local clergy voluntarily gave their services as instructors, the Principal being the Rev. Mr. L. M. Haslope. The labours of the Right Rev. Dr. Pym were not confined to the strictly defined sphere of his own church. His sympathies were extended to Christians of all denominations, as was evidenced by his taking an active part in the meetings of the Missionary Conferences held in Bombay and Poona. As a preacher and a gifted speaker, the Bishop was well known for his eloquence. Being a man of profound convictions, he always delivered himself with clearness and to the point. He was also noted for his fearlessness in giving expression to his convictions, and in exposing what he considered to be wrong and erroneous, but with consideration for those whose views differed from his own. Bishop Pym was an educationist of some experience, having been a member of both the Rotherham and Sheffield School Boards. He had an unflinching faith in the elevating and uplifting influences of a true and genuine education. Although he was known to be a vigorous Evangelical, few were prepared for the strong attitude he was to take up against some extreme practices prevalent in the Bombay Diocese, where much of the most vigorous educational and missionary work is carried on by the Society of St. John the Evangelist and the Wantage Sisterhood. In the end he formally inhibited two High Churchmen, of whom one was the respected head of the Cowley Fathers' Mission in the diocese. The two clergy appealed to the Court of the Metropolitan, who first withdrew the inhibitions *ad interim*, and afterwards settled the matter by a compromise, which reversed the action of the Bishop as far as "children's Eucharists" were concerned. The late Bishop had been suffering from diabetes for some time past, and there is little doubt that the anxiety caused by this dispute hastened his end. He died at his residence near Poona on the 2nd March 1908.

The Late Right Rev. WALTER RUTHVEN PYM, D.D.,
Late Bishop of Bombay

The Right Reverend Alfred Clifford, D.D.,

Bishop of Lucknow.

THE RIGHT REVEREND ALFRED CLIFFORD, Bishop of Lucknow, was born at Torquay in 1849. He is the son of the late Rev. J. B. Clifford, who was a well-known Clergyman at Bristol during the latter half of last century. The Bishop was educated at Redland Knoll School and at Corpus Christi College, Cambridge. After taking his degree he was ordained in 1872 and became Curate at St. Nicholas Church, Nottingham, under the Rev. G. R. Thornton. In 1874 he offered for missionary work in connection with the Church Missionary Society. He landed in India in November 1874 and for four years served at the Old Mission Church, Calcutta. After a few months' furlough he returned to India, and, having qualified himself by learning the Bengali language, he became Superintendent of the Church Missionary Society's large Mission in the Krishnagar District. He was then called to take the important post of Secretary at Calcutta for all the Society's Missions in Bengal, North-West Provinces, Central Provinces and Rajputana. In 1892 he was offered the Bishopric of Lucknow and in January 1893 he was consecrated. Bishop Clifford is the first Bishop of the See of Lucknow, which is conterminous in area with what is now known as the United Provinces of Agra and Oudh. The Cathedral of the See—already a singularly beautiful building, though not yet complete—is situated at Allahabad, where the Bishop resides. In 1886 the Bishop married Catherine Amy Bernard, daughter of Dr. Bernard of Clifton.

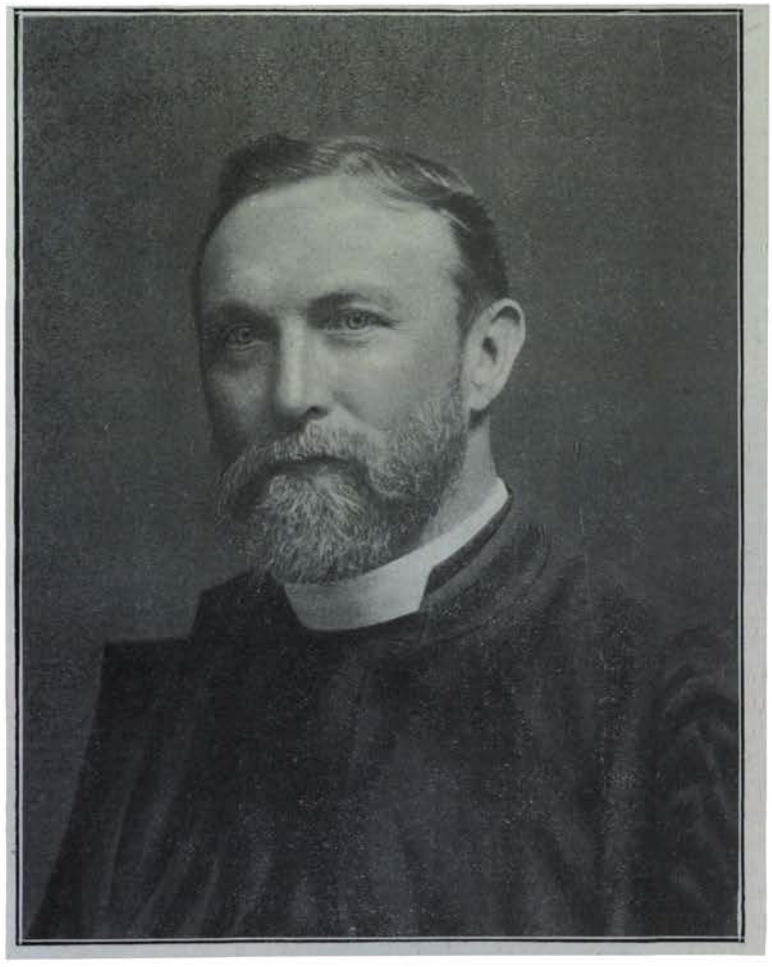


THE RT. REV. ALFRED CLIFFORD, D.D.,
BISHOP OF LUCKNOW.

THE RIGHT REV. GEORGE ALFRED LEFROY, D.D.,

Bishop of Lahore.

THE RIGHT REV. GEORGE ALFRED LEFROY, D.D., Bishop of Lahore, was born in County Down, Ireland, in 1854. He is the son of the Very Reverend Jeffrey Lefroy, Dean of Dromore, and grandson of Chief Justice Lefroy, of the Queen's Bench, Ireland. He was educated at Marlborough, and Trinity College Cambridge, where he took a first class in the Theological Tripos. He was ordained in 1879, and joined the Cambridge Mission in Delhi the same year. Twelve years later, in 1891, he became head of the United Society for the Propagation of the Gospel and Cambridge Mission. In 1899 he was made Bishop of Lahore.



THE RIGHT REV. GEORGE ALFRED LEFROY, D.D.,
BISHOP OF LAHORE.

The whole of Bishop Lefroy's pastorate has been spent in Northern India, and his career in Lahore has been marked by vigorous administration and much plain speaking. He had made a special study of the shortcomings of Europeans in this country, their mode of living, their neglect of religious duties and observances, and their devotion to things appertaining to this world only. He has never hesitated to ventilate his opinions on these matters, and to call to account not only the particular congregation to which he was addressing himself at the moment, but the European community in general, for their bridge-playing, dance loving, gambling, and frivolous propensities. These, he maintains, are not calculated to raise the European standard of morality in the eyes of the natives of the country. On the part that should be taken by the Church in secular education, he holds strong views, and in the course of a recent visitation charge to the clergy of his diocese, he referred to the Church's responsibility in respect to the educational institutions for Europeans and Eurasians carried on under Anglican management. The very largely increased measure of financial help now received from Government must lead to increased State control, and he believed this could be arranged for without difficulty or interference with the religious or moral ideas of the clergy in connexion with the schools. He is of opinion that Government will also expect from them a larger outlay of their own to assist in raising the schools to higher standards and methods of education. The obligation is not all on one side however, for Government owes a great debt to the Church, and other religious communities, for taking upon themselves in the past the burden of providing for the education of European and Eurasian children in India, a burden which must otherwise have been accepted by Government itself. The grants-in-aid given in the past, the Bishop maintains, have been altogether insignificant compared with the expenditure which would have been forced on the Government had it been compelled to maintain schools of this class on its own account. But, when all this had been said, the Bishop felt that the logical, the inevitable result, sooner or later, of this more generous, more sympathetic attitude of the Government would be a desire that the Church should also move ahead in the matter, that their proportion of outlay should be larger, their staffs more adequate and effective, and altogether their own side of the business more worthily managed.

Bishop Lefroy is a staunch advocate of anything practicable that will tend to promote a better state of feeling between Europeans and natives of the country. He shows, perhaps, an undue tendency to lay the chief blame upon his own countrymen for the present state of tension between the races; a position in which, however, he by no means stands alone.

Official.

Lieutenant-Colonel JOHN ANDERSON, M.B. (Edin.), I.M.S., Civil Surgeon, Lucknow, was born in the year 1855, in Ireland. He was educated at the Edinburgh University and took his degree of M.B. in the year 1878. He entered the Indian Medical Service the same year and came out to India in 1879. He first served in the second half of the Afghan Campaign. He was then transferred to the North-West Provinces (now the United Provinces). He served as Civil Surgeon at Bijnore, Moradabad, Allahabad, Bareilly, and Mussoorie, and was Civil Surgeon of Simla for a period of three years. He was Principal

Lieut.-Col. JOHN ANDERSON.

of the Medical School at Agra for three years, and for the past six years has held the position of Civil Surgeon at Lucknow. He holds a medal for meritorious service in the Afghan Campaign; is a Fellow of the Allahabad University, and a Member of the British Medical Association.

Mr. ARTHUR HENRY ASHTON, Executive Engineer,

Mr. A. H. ASHTON.

Public Works Department, United Provinces, was born in 1862 at Rangiora, Christchurch, New Zealand, and was educated at Christchurch. He entered the Indian Public Works Department in 1883, his first service being in Kumaon, and he was subsequently appointed to various districts in the North-West Provinces. His services in connection with the famines of 1896-97 and 1899-1900 obtained for his work the special mention of Government. From 1896 till 1903 he held the post of Divisional Engineer at Jhansi, Allahabad, Fyzabad and Lucknow Divisions respectively. He was appointed on special duty to Naini Tal in 1906.

Mr. HEWLEY MORTIMER BAINES, Under-Secretary, Buildings and Roads Branch, Public Works Department, Punjab, Lahore, was born in New Zealand in 1865. He was educated at Repton School and Cooper's Hill Engineering College, where he passed out successfully in 1888, coming out to India in 1889 as Assistant Engineer. He served in the Tochi Valley in 1897, and was awarded the India Medal with Punjab Frontier, 1897-98, clasp. He was

Mr. H. M. BAINES.

promoted to Executive Engineer, 1st Grade, in 1905, and appointed Under-Secretary in 1906.

Lieutenant-Colonel CHARLES JAMES BAMBER, D.P.H. (Cantab.), M.R.C.S. (England), L.R.C.P. (London), Sanitary Commissioner and Professor of Hygiene,

Lieut.-Col. C. J. BAMBER.

Medical College, Lahore, was born in 1855, and educated at the Bedford Grammar School, and St. Bartholomew's Hospital, London. He took the M.R.C.S. and L.R.C.P. in 1878 and the D.P.H. in 1892. He joined the Indian Medical Service in 1878 and came out to India in the following year.

For the first nine years of his service he was in military employ. In 1881 he served in the Mahsud Waziri Expedition, being in medical charge of the Cavalry Brigade. He again saw active service in Burma in 1886-87, receiving the medal and clasp.

In 1888, he was posted to the Punjab as Civil Surgeon, and worked in that capacity in several districts. For five years he was Civil Surgeon of Rawalpindi.

In 1897, he was afforded another opportunity of seeing active service by joining the Malakand Field Force. On this expedition he carried with him an X-ray apparatus. For his services he was awarded the medal and clasp.

He was eventually appointed, in 1900, Sanitary Commissioner with the Punjab Government, and Professor of Hygiene, Medical College, Lahore.

At the Delhi Durbar in 1902, he was appointed a member of the Central Committee, and placed in administrative charge of the medical and sanitary arrangements of the Civil camps. These onerous duties he carried out successfully, and when the Durbar broke up he received the thanks of the Government of India.

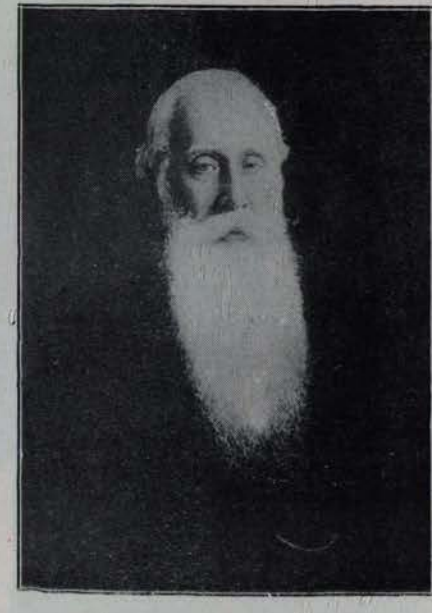
He is a Fellow of the Royal Statistical Society of England.

The Hon'ble Mr. Justice PRAMADA CHARAN BANERJI, B.A., B.L., J.P., Puisne Judge of the High Court, Allahabad, is a native of Uttarpara in Bengal, and was born on the 10th of April 1848. After receiving his education at the Presidency College, Calcutta, he

Hon. Mr. Justice P. C. BANERJI.

graduated in the Calcutta University in 1867, taking a high place in the first class. After obtaining the degree of Bachelor of Laws of that University he practised for a short time in the Allahabad High Court as a pleader, and then entered the Judicial Service of the North-West Provinces. He had a distinguished career in that service and rose to the top in the short period of eleven years. In 1886, he was appointed Judge of the Small Cause Court at Allahabad, an appointment till then reserved for members of the Covenanted Civil Service only. In 1893, he was appointed Additional Judge of Lucknow, and in December of that year was elevated to a seat in the High Court of the North-West Provinces, an office which he still holds. He is a Fellow of the University of Allahabad and was thrice elected President of the Faculty of Law. He is a member of the Syndicate and of several sub-committees of the University. He is President of the Committee of the High Court Legal Practitioners' Examination and also of the Council of Law Reporting of the Allahabad High Court.

Mr. ROBERT BELCHAMBERS, Registrar of the High Court at Calcutta (retired), was born in the North-West Provinces of India, on the 7th December, 1830. His father was in the service of the Hon. East India Company, and came to this country in 1817. This gentleman had the misfortune to lose his sight, and the circumstance so told on the fortunes of the family that Mr. Robert Belchambers was indebted to the kindness of two of the early Baptist missionaries for his education. He relieved his parents of his maintenance at the age of fifteen, and came to Calcutta to seek em-



Mr. R. BELCHAMBERS.

ployment when he was eighteen years of age. He had the good fortune to obtain an introduction from Major Macpherson in Political employ, in whose service he had

been, to his brother Mr. William Macpherson, M.A., Bar.-at-Law, who at that time held the offices of Master in Equity, Registrar and Accountant-General of the Supreme Court. Through this introduction he obtained an appointment as subordinate clerk in the Master's office, and was afterwards promoted to Chief Clerk in the Registrar's office, and subsequently to Deputy Registrar of the Court. His abilities and industry attracted Mr. Macpherson's attention, and laid the foundation of a life-long friendship with his patron. Mr. Macpherson's friendship took a practical shape. Under his guidance, Mr. Belchambers pursued his legal studies and prepared himself for the law examination, which led to his admission as an attorney. To the advice and assistance of his master, Mr. Belchambers attributes the success which has attended him through life. Mr. Belchambers' services have been many and remarkable. His long service in the High Court extended from 1848 to 1899. He performed simultaneously the duties of Registrar, Accountant-General, Taxing Officer, Chief Clerk of the Insolvent Court, etc. His services include the furnishing of many important Notes, among which was a Note "On the Bill to Consolidate the Law relating to the Sheriff, and to the execution of Decrees of the High Court." This Note was submitted to Government by the Judges. Another Note by his hand, on the Civil Procedure Code, was specially acknowledged in the report of the Select Committee of the Governor-General's Council. He also prepared a set of Rules of Procedure, which were adopted by the Court, and some of which were embodied in the Civil Procedure Code. He also published a book of Rules and Orders of the High Court, with notes and an index, which was added to the list of subjects of examination, both for vakils and attorneys, and a book of practice of the Civil Courts. In addition to his multifarious duties, he revised the Rules relating to the admission of attorneys, so as to entitle attorneys of the High Court to the benefit of the Colonial Attorneys' Relief Act, and prepared Rules under the Transfer of Property Act. He also prepared other Rules, which were published separately. These convey but a slight indication of the great labours which Mr. Belchambers performed during his half century of service. His personality gained him the respect and friendship of all with whom he came in contact. On his retirement he received from Sir Francis Maclean, Chief Justice, a friendly and eulogistic letter, in which his career was alluded to in most flattering terms. Among other things, Sir Francis wrote "Your most valuable career has elicited from all quarters nothing but praise, and it has obtained for you extension of service unparalleled in the career of any Indian official." In the year 1900, twelve months after his retirement, the Attorneys of the High Court did Mr. Belchambers honour by installing his portrait in the Attorneys' Library at the High Court. Sir Francis Maclean, C.J., presided at the unveiling ceremony, and among the large gathering present were included all the Judges not absent from Calcutta and the most distinguished members of the Bar and other branches of the legal profession. On this occasion a presentation was made to Mr. Belchambers of a handsome silver tea service. Mr. Belchambers' service dated from almost pre-historic times; the legal world he entered as a youth was very different from the existing one. He was the last Registrar of the old Supreme Court and the first Registrar of its successor, the present High Court. He remembers the time when there were no Judges of Indian descent, no Indian Barristers or Attorneys. His reminiscences include the Indian Mutiny of 1857, the assumption of the title of Empress of India by Queen Victoria, the visit of the Prince of Wales, now King-Emperor, and all the curious, epoch-making happenings of the Indian Empire during the sixty years since his arrival as a boy in Calcutta.

Chev. G. BETTONI, Vice-Consul for Italy (Officiating Consul during the absence of Dr. Gorio), was born at Brescia, near Milan, Italy, in the year 1875. He was educated at Milan and holds a high degree in Classics. After finishing his education he travelled abroad to obtain a knowledge of different languages. He came to India in the year 1900, to take charge of the management of the "Società Filatura Cascami Seta" of Milan in Bombay, the largest firm in the world in silk waste yarn manufacture, and is still looking after the firm's business. He was appointed Vice-Consul for Italy in the year 1904.

Lieutenant-Colonel GEORGE FREDERICK WILLIAM BRAIDE, M.B., B.Chir. Victoria University (Manchester), M.R.C.S., Eng., I.M.S., Inspector-General of Prisons, was born at Kasauli, India, in the year 1862, and educated at the Owen College, Manchester.

Lieut.-Col. G. F. W. BRAIDE.

He obtained his M.B. and B.Chir. degrees in 1886, and joined the Indian Medical Service on the 31st March 1887, arriving in India in November of the same year. For about three and a half years he was in military employ, but joined the Civil Medical Service, Punjab, in 1890, and was appointed Superintendent of Jails in Mooltan, Chinawan and Lahore, respectively. He was in charge of the Lahore Central Jail for thirteen years, and was at length permanently appointed Inspector-General of Prisons, Punjab, in 1906, which position he still holds.

Mr. FRANCIS EDWARD BULL, Executive Engineer, Irrigation Department, P. W. D., Bareilly, was born in England in the year 1866 and was educated at Marlborough. After passing through the Cooper's Hill College, he worked for one year on the Manchester Ship Canal, to gain a thorough and practical experience of his profession. He came to India in the year 1890, and the same year he joined the service at Rurki as an Assistant Engineer. One year later he went to Aligarh, and after serving there for two years he was transferred to Meerut where he remained for three years. In the year 1897 he went to Cawnpore as an Executive Engineer, and after serving there for five years he was transferred to Bareilly in the year 1901, where he continues as an Executive Engineer in the Irrigation Department.

Lieut.-Col. ROBERT NEIL CAMPBELL, M.B., C.M., I.M.S., Civil Surgeon, Dacca, was born on the 24th September 1854 and educated at Edinburgh. He joined the Indian Medical Service on 1st October 1877,

Lieut.-Col. ROBERT NEIL CAMPBELL.

and until the year 1883 was in military employ. In that year he was appointed Civil Surgeon of Tezpur, Assam. In this capacity he subsequently served at Shillong and Gauhati till 1896, when he was appointed to officiate as Senior Medical Officer and ex-officio Assistant Superintendent at Port Blair in the Andaman Islands. In 1896, he returned to Gauhati as Civil Surgeon and was subsequently transferred to Shillong. In 1900, he was appointed Superintendent of the Purnea Jail, and in the same year made Civil Surgeon of the 1st Class, and in 1901 appointed to Dacca. He was appointed Lieutenant-Colonel and specially selected for increased pay on 1st April 1904.

War Services.—N. E. Frontier of India, Naga Hills, 1879-80. Despatches G. G. O. 123 of 1880, Medal with clasp. Kaiser-i-Hind Medal 1st Class, 1900.

The Hon'ble Mr. Justice PROTUL CHANDER CHATTERJI, C.I.E., Permanent Judge, Chief Court, Punjab, Lahore, was born in

Hon. Mr. Justice P. C. CHATTERJI.

Calcutta in the year 1848, of an ancient and distinguished but decayed Kulin Brahmin family. He received his early training in the School of the General Assembly, Scotland, in Calcutta, and took his degree of M.A. in 1869. He became Bachelor of Laws in 1870, and after being enrolled as a vakil of the Calcutta High Court, removed to Lahore to practise at the Bar of the Chief Court, Punjab, where he quickly established a large practice. In 1886 he was appointed a Municipal Commissioner of Lahore by the Government. He remained on the Board till 1895, when he resigned on being nominated Judge of the Chief Court, in which post he first officiated in 1889, and was permanently appointed in 1894. He became a Fellow of the Punjab University, by election, and was appointed Secretary to the Law Faculty, and elected Dean of the Faculty in 1898. On the reconstitution of the Punjab University in 1905, he was re-appointed a Fellow and still holds the office. He has been Examiner in Law and other subjects to the University on several occasions, and materially helped Sir William Rattigan, the Vice-Chancellor, in framing the rules and regulations of the old University, for which service he was awarded the title of Rai Bahadur. He is President of the Punjab Public Library and of the Victoria Diamond Jubilee Hindu Technical Institute, founded in 1897. He was made a C.I.E. at the Delhi Coronation Durbar.

Mr. Chatterji was also appointed Vice-Chancellor of the Punjab University in 1904. He takes a keen interest in Freemasonry, has passed through all the degrees, and holds the rank of Past Deputy District Grand Master.

Mr. GEORGE SUMMERLY CARMICHAEL COLE, Superin-

Mr. G. S. C. COLE.

tendent of Police, Lucknow, was born in the year 1872 in London,

and is the son of Col. H. H. Cole, R.E. He was educated at Wellington College, and came out to India in 1890 when he joined the service of Government, in the Police. His first appointment was as Assistant District Superintendent of Police at Bareilly. His promotion has been extremely rapid as he was appointed to the substantive grade of District Superintendent in 1892; a record as being the youngest District Superintendent in the service. He was in charge of the Lucknow District from 1894, but has recently been transferred to Muttra.

The Hon. Mr. R. H. CRADDOCK, C.S.I., Chief Commissioner of the Central Provinces, was born in 1864, and is the son of the late Surgeon-Major William Craddock. of the 1st Goorkhas. He was educated at Wellington College, and at Keble College, Oxford, and entered the Indian Civil Service in 1884. In December of that year he was posted to the Central Provinces, where the whole of his service has been spent. After the usual period of service as Assistant Commissioner, he was engaged for five years on Settlement work, and for a further period of five years in Secretariat work, being appointed Chief Secretary to the Chief Commissioner of the Central Provinces in 1900. Two years later he was appointed Commissioner of Nagpur, and in the following year he was made a Companion of the Order of the Star of India.

The chief literary work on which he was engaged during this period included the Settlement Report of the Nagpur District, and the two Reports on the Famines of 1896-97 and 1899-1900. He attended the Conference in 1893 in connexion with the Cadastral surveys of Behar, at the invitation of Sir Anthony MacDonnell. He was also deputed to represent the Central Provinces in 1894 at a Conference regarding Land Records, convened by Sir Charles Elliott in Calcutta.

In March, 1907, Mr. Craddock was appointed Chief Commissioner of the Central Provinces and Berar, which latter area was amalgamated with the Central Provinces in 1902. Since he assumed charge of the Administration the principal matters that have occupied his attention have been the famine, so far as it affects the Central Provinces, various experiments in connexion with the crops, and sanitary improvements in the city of Nagpur. With regard to the famine, the distress arising from the failure of the Monsoon, although it was serious, was at no time so great as in the neighbouring provinces, and the position was rendered less critical by the advent of timely rain. But at the beginning of 1908 the Government was forced to review its financial position in order to decide what allotments should be made for famine relief, and what services could be reduced for that purpose. At the beginning of the year, 70,000 people were in receipt of relief, but the ordinary relief works were sufficient in most districts to provide for the requirements of the labouring classes. Village works were opened in two districts, and special relief was given to weavers, gratuitous relief being afforded to other classes. With regard to crop experiments, a fair measure of success attended the various experiments carried out by the Government to discover suitable additions to the commercial crops of the Chattisgarh Division. The most interesting were those connected with jute, the cultivation of which, under the supervision of an expert from Dacca, is being attended with encouraging results. In mining concessions there has been something of a boom, and the Government has been flooded with applications for prospecting and mining concessions, many of the applicants being Indians, and Indian capital being largely utilized. Manganese, coal, iron, and other minerals have been discovered in various places, and hopes are entertained that there is a great future before the Central Provinces in the development of its mineral resources. In municipal matters, the Hon. Mr. Craddock has shown great interest, and his previous service as Commissioner of Nagpur has enabled him to fully appreciate the needs of the chief city. To relieve the congestion in crowded localities, the Government has acquired and handed over to the Municipality extensive plots of land in the outskirts of the city; new roads are being made, the new water-works scheme, which will relieve the uncertainty of the present supply, will soon be an accomplished fact, and another large scheme, that of the drainage, is nearing completion.

The Hon. Mr. Craddock was married, in 1888, to Frances Henrietta, youngest daughter of General H. R. Browne. He is a member of the East India United Service Club.

Mr. HENRY DUFFIELD CRAIK, B.A., I.C.S., Registrar, Chief Court, Punjab, Lahore, was born in January, 1876, in England, and educated at Eton, and at Oxford University where he took the B.A. degree in 1898. Passing into the Indian Civil Service, he was posted to the Punjab, where he served as Assistant Commissioner in several districts, on plague and general duty. He officiated as Registrar, Chief Court, Punjab, from April to October 1903, and was appointed substantive Registrar in March 1905.

Major RICHMOND TREVOR CRICHTON, Indian Army, Superintendent, Bengal Service, Survey of India, was born in 1864 at Calcutta, and educated at Edinburgh, Scotland. He joined Sandhurst College in 1883, and thence entered the Army, being attached to the 2nd Battalion, Highland Light Infantry, in 1884. The same year he arrived in India. He served with H. L. I. for about five years, until, in October 1889, he was admitted to the Bengal Staff Corps, and the same year appointed to the Survey of India as Assistant Superintendent. Till 1891 he served with this Department in the North-West Provinces, and in November of that year was transferred to Bengal, where he was in charge of the Cadastral Survey in Orissa. In 1893 he was appointed to the charge of the Behar Survey; and in 1895 was gazetted Superintendent of Provincial Surveys, Bengal, which appointment he now holds.

The Hon'ble Mr. Justice DINSHA DHANJIBHAI DAVAR, the first Parsee Judge on the Bench of the Bombay High Court, was born on the 6th of November in the year 1856. He commenced his education in the Proprietary High

School, Bombay, from where he passed the University Entrance Examination. He then joined the Elphinstone College during the time of Sir Phillip Wodehouse and Mr. Oxenham. In College life he was not only bright and foremost in his studies, but was also prominent in football, cricket, and amateur theatricals. His contemporaries in College were Sir Jamsetjee Jijibhoy, the late Dastur Peroze Jamasp, and Mr. Jehangir Dossabhoy Framjee. In 1877 he went to England and joined the Middle Temple, and was called at the Trinity Term of 1880. He was admitted an Advocate of the Bombay High Court in August of the same year. At that time

The Hon. Mr. Justice D. D. DAVAR.

there was a glut of Barristers at the High Court, but he sought other fields, and soon distinguished himself at the Small Cause Court for his astuteness and grasp of commercial questions, and in the Police Courts by his conduct of criminal cases. In the Durant Blackmailing Case and the Tilak Case he fought with great ability, and distinguished himself in cross-examination. In the latter case he was associated with the late Mr. Pugh of Calcutta. He was also Junior Counsel to Sir Griffiths Evans when he fought out the great Partition case, known as the Moolji Jetha Case. After 1896, he gave his undivided attention to the High Court, and from 1898 his career has been one of uninterrupted success. He has been entrusted with a very large number of briefs, entailing long and arduous hours of labour. His practice was a very lucrative one, especially in commercial cases, on which he brought a wonderful knowledge of native book-keeping to bear. He was also recognised as one of the cleverest cross-examiners in criminal cases. The Junior Native Bar owe him a debt of gratitude for the manner in which he fought for the equality of rights of Native and European Barristers practising in the Bombay High Court. He broke down all the distinctions that had hitherto existed, by his individuality and the able and hearty manner in which he co-operated in cases with Messrs. Macpherson, Lang, and other leading lights of the local bar. In accepting the post of Judge in the Bombay High Court, Mr. Davar gave up a large practice, but the appointment could not but be gratifying, as it was not of his own seeking. His nomination as a Judge was gazetted in London on the 19th of October, 1906. Mr. Davar's various attainments, and his great experience of the different Courts of Law in Bombay, specially qualify him for the post he has attained.

Mr. JAMES GOULDING DAVIS, Superintending Engineer, Irrigation Branch of the Public Works Department, Punjab, India, was born at Rurki, 12th February 1858, and educated at Bishop Cotton School, Simla. He graduated as an Assistant Engineer from the College of Civil Engineering at Rurki and was appointed to the General Branch of the P. W. D. on 6th October 1879. He was employed for 15 years in the districts bordering the N.-W. Frontier, principally on the construction and maintenance of frontier roads and posts. The most important of the frontier roads on the construction of which he was employed, are the main road extending from Khushalgarh on the Indus through Kohat and Bannu to Dera Ismail Khan; that from Kohat up the Miranzai Valley to the Upper Kurram Valley; and the military road from Oghi to Darband along the Black Mountain frontier of the Hazara District. He was several times selected for employment beyond the frontiers of the Derajat, Kohat and Hazara Districts, and his services were lent to the Political Department in connection with the opening up of the Gumal Pass in 1890-91, by the construction of the first road with military posts from Murtaza to Khajuri Kach, and the bridging of the Gumal River. For his work in the Gumal Pass he received the thanks of Government. He was, soon after his return to the P. W. D., again transferred to the Political Department and sent up to the Kurram Valley (1893-94), where he built the station of Parachenar

Mr. J. G. DAVIS.

with its fort and militia lines, directly under the southern face of the Sufod Koh Mountains, and guarding the Piewar Kotal Pass into the Hariob Valley on the west, and the Argam Pass into Ningrihar on the north, and dominating the Afghan Province of Khost on the south.

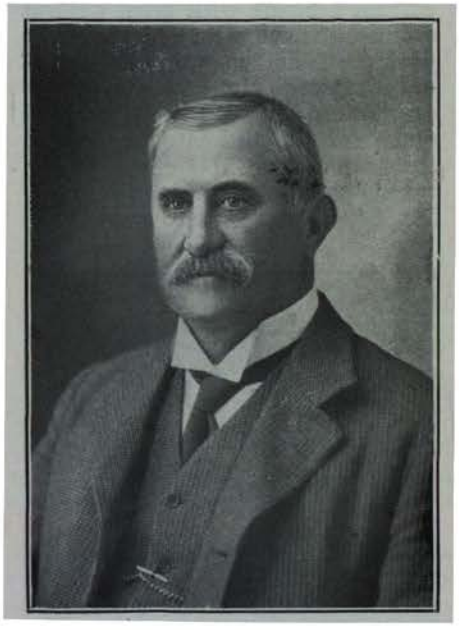
In 1895 his services were transferred to the Irrigation Branch of the Punjab, and he served at first on the Bari Doab and Western Jumna Canals. From 1900 onward he has been chiefly connected with surveys on and between the Sutlej and Ravi Rivers for irrigation schemes, and in the preparation of projects under two Chief Engineers

of the Punjab Irrigation Department, Messrs. Preston and Benton, to whom he acted as personal assistant. Two schemes were drawn up for the Lower Bari Doab Canal, and one for the Upper Chenab Canal, and on the plans thus formulated, large canals are now under construction. By the Irrigation Branch his services have twice been lent to the Government of the North-West Frontier Province, to advise on irrigation matters in the Bannu and Gumal Valleys.

Mr. Davis is now in charge of the Lower Bari Doab Canal Construction Circle, and has in addition several other surveys and projects in hand, the principal of which are connected with the control of the Kurram and Gumal rivers for irrigation in the Bannu and Dera Ismail Khan Districts on the frontier, and for the construction of weirs and canals for irrigating the Sutlej Valley and the desert uplands of Bikanir and Bahawalpur.

Mr. E. HALDEMAN DENNISON, Consul for the United States of America, Bombay, was born in Columbus, Ohio, U. S. A., in the year 1872, and was educated at Yale College and St. Paul's School, Concord, New Hampshire. In the year 1892 he went to the West, and was appointed Agent of Navajo Indians in 1894. He was afterwards transferred to Washington Indian Office in 1898. In the year 1903 he entered the Consular Service and was sent to Canada, and in 1906 he was transferred to Bombay as Consul for U. S. A. He is the grandson of the late Mr. William Dennison, who was Governor of Ohio, U. S. A., and afterwards Postmaster-General in the Cabinet of President Lincoln.

The Hon'ble Mr. STEPHEN FINNEY, C.I.E., Manager, North-Western Railway of India, and Member of the Punjab Legislative Council, was born in England in 1852 and educated at Clifton College. He entered the Indian Engineering College, Cooper's Hill, whence he passed into the Indian Public Works service in 1874. His first appointment was as Assistant Engineer, Eastern Bengal State Railway, in charge of Rungpur Sub-Division. In 1877 he was placed in charge of the Jalpaiguri District as District Engineer, and in the following year appointed Assistant Manager, Northern Bengal Railway, at that time not yet amalgamated with the Eastern Bengal State Railway. This post he held till the year 1882, when he was transferred to the Southern Mahratta



Hon. Mr. S. FINNEY.

Railway as Assistant Chief Engineer. In 1884 he went on furlough and on his return was appointed again to the Eastern Bengal State Railway as Assistant Manager. The Eastern Bengal and Northern Bengal Railways were amalgamated in the year 1887, and Mr. Finney received the appointment of Deputy Manager of the combined systems. In 1891 he was promoted to the post of Manager of the combined systems, and this appointment he held till 1899, during which period he did excellent service in bringing the system under his charge to a high degree of efficiency. In the latter year he was transferred as Manager to the important North-Western Railway. This system is second only to the East Indian Railway in point of commercial importance, taking second place, so far as gross earnings are concerned, and being in this respect far in advance of any other Indian railway, with the above exception. From a strategic point of view the North-Western Railway is the most important in India, as here the lines of railway which protect the N.-W. Frontier, converge. The selection of Mr. Finney for the onerous post of Manager of this great system is a sufficient testimonial to the esteem in which his services are held by the Government of India. In 1905 Mr. Finney was appointed a Member of the Punjab Legislative Council, and he has received the Companionship of the most Eminent Order of the Indian Empire.

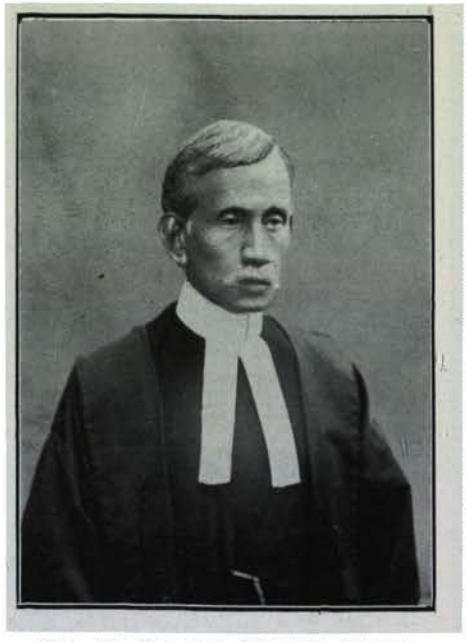
Mr. JOSEPH EDWARD GABBETT, Consulting Engineer for Railways, Lucknow Circle, was born in Ireland in the year 1855. He received his primary education at Cheltenham College, and afterwards joined the Royal Indian Engineering College at Cooper's Hill, from whence he passed out in the year 1877 and was posted to the Burma Railways as an Assistant Engineer. He was transferred to India and joined the Rajputana Railway in May 1878. In 1885 his services were lent to the

Mr. J. E. GABBETT.

Bombay, Baroda and Central India Railway. In 1888 he officiated for nine months as Manager of the Jodhpore Railway. From 1889 to 1893 he was engaged in the construction of the railway from Jodhpore to Bikanir, and from the year 1893 he was

appointed as State Engineer to the Bikanir State, and also officiated as Manager of the Jodhpore-Bikanir Railway from March to December 1894 and June to October 1895. He was Deputy Consulting Engineer for Railways at Calcutta from 1900 to 1903. In the year 1905 he was promoted to Superintending Engineer, and in December of the same year he was appointed Consulting Engineer for Railways, Lucknow Circle, in which capacity he is still serving.

The Hon'ble SIR CHANDRA MADHUB GHOSE, Senior Puisne Judge of the High Court of Judicature at Fort William in Bengal, was born at Bicrampur in the District of Dacca, in the year 1839, of a Kayastha family, his father being Rai Durga Prosad Ghose, Bahadur, Deputy Collector. In those days, Eastern Bengal, in which Bicrampur is situated, was not so advanced as it has since become, and there were small chances of obtaining the necessary education to fit the young Chandra Madhub for the battle of life in those parts. The Kayasthas, however, wherever found, are an energetic class, of great intelligence, claiming descent from Chitragupta of primeval age, and belonging to the class of Kshettriyas, who in ancient Hindu times were the warrior caste and ranked next to the Brahmans. Rai Durga Prosad enacted the part of a wise parent and placed his son in the centre of learning in the Province, Calcutta, where he attended the Hindu and the Presidency Colleges, at that time the leading scholastic institutions for Hindu lads. These were days before the introduction of the new University system in Calcutta, but in the very first year the University was established, the young student passed creditably the Entrance Examination. Owing to ill-health, Chandra Madhub was not able, or permitted, to pursue his studies to obtain a Degree in the University, but was compelled to rest awhile in order to recuperate. Later, when restored to health, he rejoined the Presidency College, and subsequently joined the Law Class of that College with a view to qualify for a forensic career. Here he had the advantage of studying law under a lawyer of commanding attainments in the person of Mr. William Austin Montriou, then Professor of Law at the Presidency College, and also Advocate of the old Supreme Court. Mr. Ghose did well under the able tuition of the eminent Professor. He was an earnest student, with great natural abilities, which fitted him for the profession, and he won the regard of Professor Montriou in whose estimation he stood high, a good omen for the ultimate success of the present learned Judge. In the twenty-second year of his life, 1860, Mr. Ghose passed with credit the



Hon. Sir CHANDRA MADHUB GHOSE.

Law Examination which authorized him to practise as a pleader. His first venue was Burdwan where he met with success as a pleader. Within six months he was appointed Government Pleader by the Government, at the instance of Mr. Beaufort, then Superintendent and Remembrancer of Legal Affairs. His old friend, Mr. Montriou, stood sponsor to him on this occasion. Having been asked by Mr. Beaufort to recommend someone for the post, he mentioned Mr. Ghose, which his knowledge of that gentleman's attainments enabled him to do without suspicion of favour. Mr. Ghose did not retain the post long, throwing it up on finding that he could not work in harmony with the local Collector. He accepted a position under Government as Deputy Collector. He held this position for a very short period only. In this manner he was headed off by fate from travelling by avenues which would have led him away from the true goal which he has since attained, and the honours awaiting him. A provincial pleadership under Government or the position of an Uncovenanted Civil Servant, however distinguished, would but ill have compensated him for his present elevated position. Mr. Ghose, after these tentative efforts, entered the line of his true vocation, and joined the old Sadar Court at Calcutta. Before long, the Sadar and Supreme Courts, which had been separate institutions from the beginning of British rule in Bengal, were fused into one, thus giving rise to the institution known as the High Court of Judicature at Fort William in Bengal. Mr. Ghose came to the Calcutta Bar with considerable experience gained in his Mofussil career, and though at that time there were Hindu advocates of brilliant abilities senior to him in the profession, he acquired a fair practice from the beginning. His old preceptor, Mr. Montriou, had never lost sight of him, and at this time we find Mr. Ghose acting for that gentleman as Professor of Mofussil Law in the Presidency College during six months in the year. In the great Rent case which was argued before a full bench of fifteen Judges, when Dwarka Nath Mitter (subsequently raised to the Bench) was opposed to Mr. Doyne, a leading advocate of the day, Mr. Ghose acted as Junior to Mr. Mitter, and was considered to have rendered very efficient service to his chief. Among his compeers, Dwarka Nath and Romesh Chandra Mitter (afterwards knighted and appointed a member of the Supreme Council) were raised to the Bench, where Mr. Ghose has since followed them. This left a clearer field for the rapidly rising advocate, and he soon attained leading rank and a very wide practice. For some years, Mr. Ghose held a position among Calcutta advocates second to none,

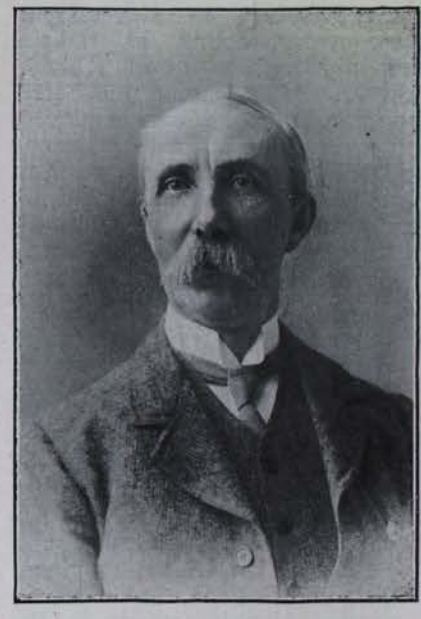
his reputation standing very high as an able, fearless and conscientious lawyer. In 1884, he was appointed a member of the Bengal Legislative Council. A vacancy on the Bench occurring in the year 1885, Sir Richard Garth, then Chief Justice, and the other Judges of the Court nominated Mr. Ghose for the post, and the appointment was duly confirmed by Her Majesty's Government. In the same year, he was appointed a Fellow of the Calcutta University, and was President of the Faculty of Law for three years. He has held the

Chev. Dr. G. Gorio.

highest distinction which the law has to bestow for over twenty years, and during that time has earned a great reputation for his grasp of facts, for the soundness of his law, the wisdom of his decisions, and for his independence. He has thoroughly justified, during the whole of his long service, the promotion which raised him to be a member of the Bench. He is now the Senior Puisne Judge of the High Court, and was recently appointed to act for the Chief Justice in the absence of the latter, as his great countryman, Romesh Chandra Mitter, acted for the Chief Justice of his day. In recognition of his services, His Majesty the King conferred on him the dignity of Knighthood in July 1906. There is no higher distinction possible under the British Government than to be, or to act for, the Chief Justice of Bengal. It should be added that Sir Chandra Madhub Ghose has for some years been known as an earnest social reformer, and is the practical leader of the Bengal Kyasht Shobha. He acted as President of the Indian Social Conference in December 1906.

Chev. Dr. G. GORIO, Consul for Italy, Bombay, was born at Brescia, near Milan, Italy, in the year 1872. He was educated in Venice and took the degree of D.C.L. in the University of Munich. After acting at the Italian Consulate at Berlin, he came to India in 1903 as Consul for Italy in Bombay.

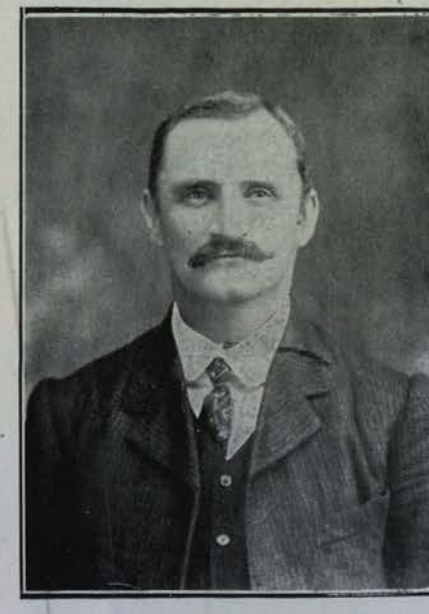
Mr. WILLIAM BORMAN GRAY, Chief Examiner of Accounts, North-Western Railway, Lahore, was born in 1854 at Cawnpore. He was sent to England for his education, which he received at Wellington College. In 1875 he returned to India, and joined the Public Works Department



Mr. W. B. Gray.

in the following year, when he was posted to the Government of India Accounts Department; and, in the course of his service, he served in nearly all the Railway Offices connected with the Government Audit. In 1897 he was specially appointed to the Auditorship of the Assam-Bengal Railway, and continued in that post till 1900. In 1901 he acted in the appointment of Deputy Accountant-General for inspection duty. He has held charge of the three principal State Railways, *viz.*, the Oudh and Rohilkhand Railway, Eastern Bengal State Railway, and the North-Western Railway. His service of 31 years has been entirely in the Railway Branch.

Mr. HENRY HENNIS GREEN, (R. I. E. College), Superintending Engineer, Darjeeling, was born in Ireland on 21st July, 1862, and



Mr. H. H. Green.

joined the service in 1883 as Assistant Engineer. For the next two years, his services were utilized on the Indian State Railways. In 1886 he was transferred to Baluchistan temporarily, but in 1888 returned to the service of the Bengal Government. He has risen through the various grades, during services which extend to most districts of Bengal, to his present position of Superintending Engineer. Mr. Green was in the Sikkim Expedition of 1888-89 and received the decoration. He also served with the Thibet Mission of 1903-4. He was appointed to his present post in March 1903.

Surgeon-General JOHN PHILIP GREANY, M.D., M.CH., L.M., I.M.S., was born in July 1851 and educated at Queen's College, Cork, and

Rotunda Hospital, Dublin, graduating from the Queen's University (now the Royal Irish University) in 1874. He came to India in November 1875, was posted on general duty and attached to the Goculdas Tejpal Hospital, Bombay. Among the many civil and military appointments which have been held by him, those deserving of notice are, his connection with the 10th, 18th, and 24th Bombay Native Infantry Regiments, the Civil Surgeoncies of Kaladgi, Kaira, Satara, Belgaum, Dharwar and Poona; at the last-named place he was also Superintendent of the Byramji Jeejeebhoy Medical School. He was Deputy Sanitary Commissioner, Southern Division, from 1878-79 and the following year acted as Superintendent of the Yerrowda Central Jail, Poona. Before acting as Secretary to the Surgeon-General with the Government of Bombay in 1883-84 he held the post of the Superintendent of the Colaba Lunatic Asylum, 1882-83. In 1902 he was re-transferred to the Military Department and deputed to Aden, and in the year following to Karachi, in both of which districts he was the P.M.O.

Surgn.-Genl. JOHN PHILIP GREANY.

He assumed charge of the office of Surgeon-General with the Government of Bombay in May 1905. Surgeon-General Greany was thanked by the Government and received six months' pensionable service as a reward for work done in connection with the famine of 1877. He is a member of the British Medical Association; the Irish Medical Graduates Association; the Association of Military Surgeons of the United States of America, and the Bombay Medical and Physical Association.

The Hon'ble Mr. RICHARD GREEVEN, Legal Remembrancer to the Government of the United Provinces, at present officiating as 2nd Additional Judicial Commissioner for Oudh, was born on the 4th September 1866, in London, of German parents. He was a Scholar and Exhibitioner of Dulwich College and junior student of Christ Church, Oxford. He joined the Indian Civil Service on the 10th September 1887, and, having taken his degree of Bachelor of Arts in the Law Finals and having been called to the Bar from the Inner Temple, he arrived in India at the close of 1888, being posted as Assistant Magistrate and Collector to Benares. He held various executive and judicial appointments until appointed an Under-Secretary to Government, subsequently acting as Judicial Secretary and as Legal Remembrancer. After leaving the Secretariat in 1897 he was employed, principally as District and Sessions Judge, in various districts, until, in 1900, he was appointed to officiate, and was subsequently confirmed, as Deputy Secretary to the Government of India in the Legislative Department. During this period he took a leading part in the preparation of the Bill for the Revision of the Code of Civil Procedure, and was deputed to report on the laws and regulations of the Penal Settlement at Port Blair. He left the Government of India in 1904 for his present appointment, and has since then been a Member and Secretary of the United Provinces Legislative Council. Mr. Greeven interested himself actively in the Volunteer movement as a Captain of the Simla Volunteer Rifles. He is a Past Master of Lodge "Philanthrophy with Independence" E.C., and holds the position of D. G. J. D. in the Provincial Grand Lodge of Bengal. He has attained the 18th Degree and is a District Grand Sword Bearer in the Order of Knights Templar. Mr. Greeven has made a special study of Continental Freemasonry in the 18th century, and has written essays

Hon. Mr. R. GREEVEN.

and pamphlets on some of the more obscure forms of popular religion in Northern India.

Mr. HENRY DALY GRIFFIN, District and Sessions Judge, Lucknow, was born in Mayo, Ireland, in the year 1864, and was educated at Black Rock College, near Dublin. He obtained a classical scholarship from the Royal University of Ireland and took his degree of Bachelor of Arts in the year 1885, from the same University. He passed the open competition for the Indian Civil Service in 1883 and joined the service in India in 1885. He was appointed Judge of the Farrukhabad District, United Provinces, in 1893. Since then he has served as Judge in several districts, and in 1904 was posted to Lucknow. In the year 1906 he officiated as Second Additional Judicial Commissioner of Oudh. He has recently been appointed to officiate as a Puisne Judge of the High Court, Allahabad.

Mr. ABUL HASSAN, Third Judge, Small Cause Court, Calcutta, son of Moulvie Mohumed Bukhsh, a leading pleader of the Patna Bar, was educated at Patna College and subsequently at the Presi-

dency College. In 1877 he went to England to complete his studies, and in 1880 he was called to the Bar. In the same year he joined the Calcutta High Court. He practised till 1887, when he was appointed Registrar of the Presidency Court of Small Causes. In 1907 he officiated for six months as the Chief Judge of that Court. Mr. Abul Hassan has always taken a keen and lively interest in the advancement—social and moral—of his community. Mainly to his efforts is due the foundation of the well-known Calcutta Mahomedan Orphanage, which was founded in the year 1895, and for which there was a pressing need, It is now in a flourishing condition and it is to be hoped that the public purse will readily unloosen itself to support so philanthrophic an institution. Mr. Hassan belongs to a well-known literary family of Behar. His father was the author of the 'Lives of the Persian Poets' and his brother, Khan Bahadur Khuda Buksh Khan, C.I.E., the well-known Bibliophile, besides possessing a fine collection of Oriental MSS. is the author of "Mahboob-ul-Lobab," a work on the lines of the "Kitab-ul-Fehrist" of Ibu Nadiem.

Mr. WILLIAM FREDERICK HESKETH, Calcutta, was born in 1840, and at 14 years of age entered an Engineer's shop in the East End of London and there worked at the profession for seven years. In the year 1861 he joined the Great Northern Railway where he remained until 1865 when he proceeded to join the Mauritius Railway under covenant, staying with the island line until the close of the year 1872. In the beginning of 1873 his services were entertained by the Cape Government Railways for the special purpose of bringing out various locomotives from Messrs. Manning and Wardels of Leeds, to Port Elizabeth, South Africa, and there to erect them. After performing this duty, he remained in charge of the Workshops at North End, Port Elizabeth. He was subsequently employed to travel round the coast to repair Cape Receife and Bird Island Lights. He was further employed as General Foreman of Works on Sunday River Bridge, afterwards blown up by the Boers during the war. In 1879 Mr. Hesketh, having left South Africa, proceeded to join the South Indian Railway under covenant as Shop and Loco. Foreman, and was placed in charge of the Madura Workshops.

Mr. W. F. HESKETH.

Subsequently he was transferred to Cuddalore to erect large new workshops for the Railway, which, when finished, Mr. Hesketh was given charge of. He remained in charge at Cuddalore till he left the South Indian Railway in the year 1885. Mr. Hesketh then joined the Burma Railways as Head Fitter at the Insein Works. In 1887 he was promoted to Construction Foreman on the line from Toungoo to Mandalay, where Mr. J. W. Buyers carried out the celebrated record of two miles a day construction. He was afterwards Foreman of Yamethin station from 1888 to 1893, when at the request of Mr. Buyers his services were transferred to the Assam-Bengal Railway, on which line he served till the year 1901, when he had to leave the district owing to breakdown of his health. He then again joined the Burma Railways but had to resign in 1903 owing to ill-health. Mr. Hesketh then joined the Murshidabad-Krishnagar construction to erect and superintend the working of a large land steam dredger, and is still on the same work at Kanchrapara.

Captain FREDERICK CHRISTIAN HIRST, Indian Army, Officiating Deputy Superintendent, Survey of India, and Superintendent of Bengal Surveys, was born in England in 1874 and educated at Bath College, and later at Sandhurst. He joined the Army on February 20th, 1895, being posted to the 96th Manchester Regiment. He arrived in India on the 2nd April 1895, and served with the above regiment until appointed Wing Officer in the 22nd Bombay Infantry. In 1899 he was appointed a Deputy Assistant Commissary-General, and in the following year joined the Survey of India on probation, as an Assistant Superintendent. The rest of his service has been in this department, during which time he has been stationed at Dehra Dun, and in Behar, Bengal, Eastern Bengal and Chota Nagpore, until he was promoted to the position he now holds.

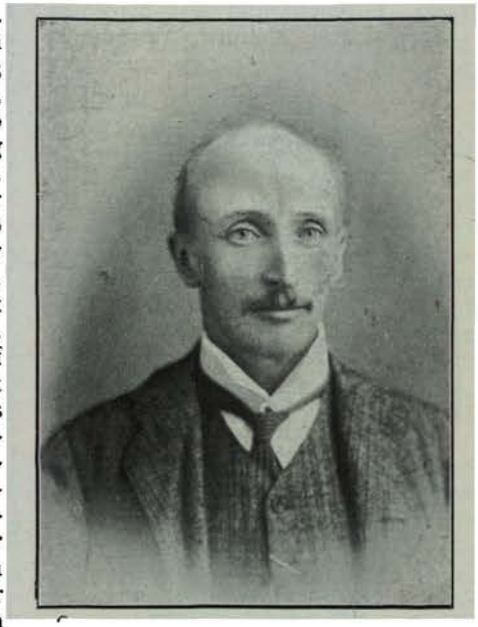
Mr. EDWARD RALEIGH JARDINE, Presidency Post Master, Bombay, was born in the year 1858 in the Bombay Presidency,

Mr. E. R. JARDINE.

and educated at Southsea. After completing his education, Mr. Jardine was appointed to the Marine Postal Service in 1876. He was Assistant Mail Officer in 1876 and became Mail Officer in 1877. He

was Superintending Examiner, Persian Gulf Division, from 1886 to 1888. Officiated as Deputy Post Master, Bombay, in 1889. Aden was his next sphere of activity where he was Post Master in 1890. Mr. Jardine was on special duty in the Director-General's Office in 1893 and was made Deputy Post Master, Bombay, in the same year. Two years later Mr. Jardine was acting Presidency Post Master, Bombay. In 1899 Mr. Jardine was Post Master of Rangoon. From July 1902 to March 1903, he acted as Deputy Post Master-General, Burma. Mr. Jardine became Presidency Post Master, Bombay, in April 1903. Special mention was made of Mr. Jardine to the Government of India in the Director-General's Annual Report of 1898-9, for introducing the new and useful system of continuous delivery in Bombay. Again in the report of 1900-01 Mr. Jardine is mentioned for stopping opium smuggling through the Post Offices, Burma, and for organizing Postal arrangements in Rangoon. Once again, in the 1903-04 Report, Mr. Jardine's name figures for reorganising postal arrangements in Bombay, and for introducing a system of accurate postal maps of deliveries in the Presidency Towns.

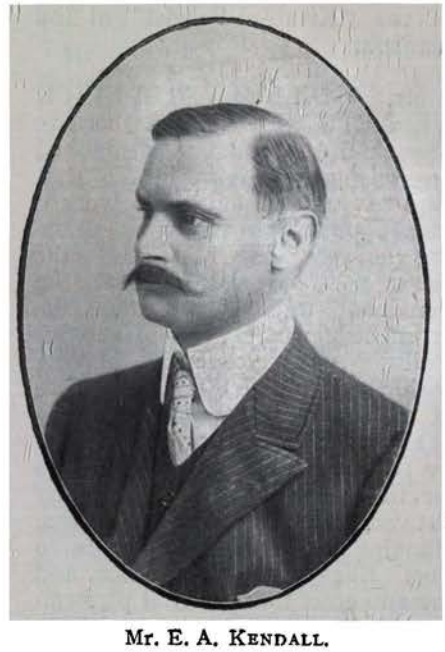
The Hon'ble Mr. Justice DONALD CAMPBELL JOHNSTONE, I.C.S., Judge, Chief Court, Punjab, Lahore, was born in 1857, in India, and received his education at the Edinburgh Academy. Passing into the Indian Civil Service, he came out to India in 1879, and was appointed Assistant Commissioner, Lahore. His services were placed at the disposal of the Bombay Government in 1882, when he was appointed Assistant Collector and Magistrate. His services were next requisitioned by the Punjab Government in 1884, and he held appointments, first as Junior Secretary and later on as Senior Secretary to the Financial Commissioner, from 1887 to 1891, in which period he compiled an Excise Manual for the Punjab and wrote pamphlets on certain Punjab industries. He was promoted to District Judge in 1891, which post he filled for two years. He officiated as Divisional Judge in 1894, and was made permanent therein in 1895. He was placed on special duty as Additional Sessions Judge at Karnal in 1897, and again in the following year he was placed on special duty to enquire into the charges against Sardar Gurdial Man Singh. In 1902 he officiated as Judge, Chief Court. He took up the officiating appointment of Temporary Additional Judge, Chief Court, Punjab, Lahore, in 1905, and was appointed First Temporary Additional Judge the same year, and Officiating Judge, Chief Court, Punjab, Lahore, in 1906.



Hon. Mr. Justice D. C. JOHNSTONE.

Mr. GEORGE ALFRED KEATINGE, Secretary and Superintendent, Municipal Board, Mussoorie, was born at Jullundur, in the Punjab, in the year 1856. He was educated at Hollyville Park College, Dublin. He took his degree at Trinity College, Dublin, in 1872, and three years later came out to India in the service of the Railways, holding the post of Chief Inspector for many years. After leaving railway employment, Mr. Keatinge worked as a Contractor for Railways in the Public Works and Canal Departments, and in 1897 he was appointed Secretary and Superintendent of the Municipal Board, Mussoorie. Under his supervision the financial position of the Mussoorie Municipality has notably improved, the collections from taxes have been much increased and expenditure in all departments greatly reduced. Since his appointment the very important sewerage scheme, which provided a shoot to carry all the Mussoorie sewage to Bhalru, has been carried out. At Bhalru it is turned on to the farm where fodder is grown for the conservancy cart-bullocks. During recent years the new hydro-electric scheme was introduced, and the burden of the correspondence fell on Mr. Keatinge, and all the work in connection with it had to pass through his hands.

Mr. EDWARD AUSTIN KENDALL, I.C.S., Additional Sessions Judge, Meerut, United Provinces, was born in 1871 in London and educated at Bedford Grammar School. He was a classical exhibitor of John's College, Cambridge. He joined the I.C.S. on 5th September 1892, and came to India in October the same year, and was first posted to Moradabad as Assistant Magistrate and Collector. He served in the same capacity, and as Joint Magistrate, in different districts till 1899, from which year he officiated as District and Sessions Judge. On return from furlough in 1904 he was appointed to Meerut as Additional Judge there. In 1891 he was engaged on Special Plague duty at Hurdwar.



Mr. E. A. KENDALL.

The Hon'ble Mr. Justice ALFRED KENSINGTON, B.A., I.C.S., Judge, Chief Court, Punjab, Lahore, was born in the year 1855, in Jersey,

Hon'ble Mr. Justice KENSINGTON.

and educated at Marlborough and University College, Oxford. He came to India in 1877 as a member of the I.C.S., and was appointed Assistant Commissioner, Lahore, early in 1878. After serving in several districts, he joined the Settlement Department in 1880 as Assistant Settlement Officer, Hoshiarpur. In 1883, after a short period as Under-Secretary to Government, he was appointed Settlement Officer of Amballa, continuing in the district as Deputy Commissioner on completion of the Settlement. From 1890 to 1892 he served under the Government of India as Under-Secretary and Deputy Secretary in the Finance Department, reverting to the Punjab, on return from furlough in 1895, as Deputy Commissioner of Amritsar. In 1896 and 1897 he held the appointment of Accountant-General at Allahabad, till he joined the Judicial Department of the Punjab as Divisional Judge in November 1897. He has since remained in that department, serving in the Jullundur, Delhi and Lahore Divisions, and after acting as a Judge of the Chief Court during 1902, he was permanently appointed in that post in December 1904.

Dr. JOHN WALTER LEATHER, PH.D., F.I.C., &c., Imperial Agricultural Chemist, and at present officiating Director of the Agricultural Research Institute, Pusa, was born at Rainhill in Lancashire on December 26th, 1860. He received the principal part of his education as a chemist at the hands of August Kekule at Bonn, Germany, between the years 1883 and 1886. Thereafter, for six years, he was senior assistant to Dr. J. A. Voelcker at the Royal Agricultural Society of England. He joined the Indian Agricultural Department in November 1892 as Agricultural Chemist, which appointment he has held continuously. The records of his work on Agricultural Chemistry for India have been

Dr. J. WALTER LEATHER.

published chiefly in the Agricultural Ledger and the Bulletins of the Provincial Departments; others are found in the Transactions of the Chemical Society, the Society of Chemical Industry and the Society of Public Analysts. Dr. Leather is a keen volunteer and has served through all ranks, from trooper to Captain, in the Dehra Dun Mounted Rifles, in which Corps he still holds his Captain's commission.

Mr. WILLIAM HERBERT LOVEGROVE, Deputy Conservator of Forests, Naini Tal Forest Division, United Provinces, was born in England in 1868 and educated in that country. He passed out of Cooper's Hill in 1889 and coming out to India, joined the Forest Department in Bengal as Assistant Conservator. For the next seven years he served as Assistant and Officiating Deputy Conservator in various parts of Bengal, including Darjeeling, Chittagong, Chaibassa and Dumka. He was transferred to the United Provinces in 1896, and in the following year obtained his substantive grade as Deputy Conservator. In 1900 he went on long leave, and returning was, in 1903, deputed on special duty to report upon the forests of the Bhabar and Tarai Estates in the Naini Tal Districts. In 1904 he was appointed to his present post, whence, in 1896, he was sent to Bengal to officiate as Conservator for three months.

The Hon'ble Mr. JOHN WILLIAM PITT MUIR-MACKENZIE, M.R.A.C., M.R.A.S., C.S.I., Member of Council of the Governor of Bombay (Revenue and Finance), was born in the year 1854 in France, and was educated at Eton College. He passed the Civil Service examination in 1874, and arrived

Hon'ble Mr. MUIR-MACKENZIE.

in India on the 28th November 1876, and was posted to Satara. He became Assistant Collector and Magistrate in February 1877, and in 1878 was appointed Assistant Poli-

tical Agent in charge, Jath State. In 1883 he was deputed to the Royal Agricultural College at Cirencester and after passing through the course obtained the Diploma, and the Diploma of the Royal Agricultural Society of England. In November 1887 he was appointed 2nd Assistant Collector and Magistrate at Ahmednagar, and in the same year officiated as Director of Land Records and Agriculture at Poona. In 1889 he was appointed Under-Secretary to the Government of India, in the Revenue and Agricultural Department, and up to the year 1892 he four times officiated as Secretary to the Government. In the year 1893 he went on special duty to Réunion and Mauritius in connection with Indian Cooly Immigration, and subsequently reverted to the Bombay establishment. On return from leave in 1895 he became Survey Commissioner and Director of Land Records and Agriculture, which position, with short interruptions, he held until 1898, when he became Secretary to Government in the Revenue and Finance Department. In August 1899 he was made additional Member of Council of the Governor of Bombay for making Laws and Regulations. He became Chief Secretary to Government in August 1900 and went on deputation as a Temporary Member. He officiated with the Irrigation Commission in 1901-2. In 1903 he officiated as Member of Council, and in 1904 went to Karachi when he became Commissioner in Sind. On the 6th of August, 1905, he was appointed Member of Council of the Governor of Bombay, and on the resignation by Lord Lamington, of the Governorship of the Presidency in July, 1907, Mr. Muir-Mackenzie assumed the office of Acting Governor of Bombay, which post he held pending the arrival of Sir G. S. Clarke, the newly appointed Governor, in October, 1907.

Col. RODERICK MACRAE, M.B., I.M.S., Inspector-General of Civil Hospitals, Bengal, is the second son of the late John Macrae, of the Macraes of Glenshield, and was born at Lochalsh, Rosshire, Scotland.

He was educated at the Royal Academy, Inverness, and the University of Edinburgh, where he graduated with distinction in 1873. He entered the Indian Medical Service in 1875, and after passing through Netley arrived in India in November of the same year.

He was first posted to the Presidency General Hospital, Calcutta, where he did duty for six months, and in May 1876 was appointed to the medical charge of the 32nd Pioneers at Umballa. In November 1876 he was ordered to Meerut to take charge of the 5th Bengal Light Infantry, with which regiment he marched from Meerut to Bhagalpur. He remained at the latter station until the outbreak of the Afghan War in 1878, when he was posted to the Field Force in the Kurram Valley. He was

Col. R. MACRAE.

present during the operations in the Kurram Valley until April 1879, when he was appointed to the charge of the 2nd P. W. O. Goorkhas then in the Jellalabad Valley, where they continued to serve for some months. He returned with the regiment on the conclusion of the first phase of the Afghan War and was with them during the "death march" through the Khyber Pass, when some hundreds of deaths occurred from cholera. He again accompanied the Regiment to Cabul after the "Cavagnari Massacre" and was present at the affair in the Gugdulluck Pass, and accompanied Sir Charles Gough's column to the relief of Sherpur in December 1879. While the force remained at Cabul he was present at various operations in the Kohistan, Logar, and Maidan Valleys. In 1880 he joined the 28th Punjab Native Infantry at Cabul. On the withdrawal from Cabul, he was among the officers present in the "historical tent" outside Sherpur, in which the throne of Cabul was made over to the late Abdur Rahman.

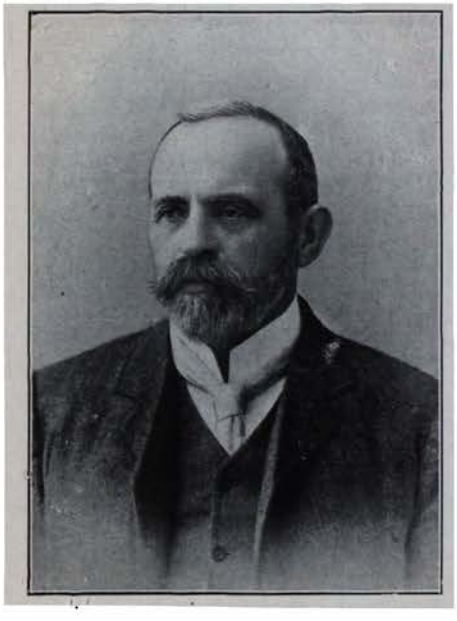
On return to India, he was thanked for "excellent services in the field," and was offered the Garrison Surgeoncy of Chunar. He took over charge at Chunar early in 1881, and took "private affairs leave" in India from 10th July to 31st December 1881. Early in 1882 he elected for civil employ, and on the 27th April of that year was appointed Resident Surgeon at the Medical College, Calcutta. In December he was appointed Civil Surgeon of Jalpaiguri, and during 1883 and 1884, was successively Civil Surgeon of Jalpaiguri, Rajshahi, Shahabad, and Alipore in the 24-Parganas. On 23rd November 1884, he went on furlough for two years. On return from furlough in November 1886, he acted as Civil Surgeon of Saran and Nadiya for short periods and became Civil Surgeon of Shahabad in April 1887, where he remained until February 1891, when he went to Champaran, from which district he again went on furlough for one year and eight months in April 1892. On return from furlough in December 1893, he first acted as Health Officer, Calcutta, then became Civil Surgeon of Gaya on 30th January 1894. During a cholera epidemic in the Gaya Jail, Colonel Macrae gave Mr. Haffkine his first opportunity of testing in a scientific manner his system of preventive inoculation for cholera. It was during the same epidemic that he proved for the first time the agency of flies in the diffusion of the disease, which had only previously been suspected. In May 1896, he went on six months' leave on urgent private affairs, and returned to India as Civil Surgeon and Superintendent of the Medical School, Dacca, in November 1896. He remained there till June 1901 when he again went on furlough and returned to India in Novem-

ber 1902. He was appointed Civil Surgeon, 24-Parganas, and Medical Inspector of Emigrants, and subsequently Civil Surgeon of Hazaribagh. His services were placed at the disposal of the Government of India, Home Department, from 3rd April 1904, and he was appointed Inspector-General of Civil Hospitals, Central Provinces, with rank of Colonel.

From 12th December 1904 to 20th February 1905 he was in military employ, and on 12th February was promoted Colonel, and appointed Inspector-General of Civil Hospitals and Sanitary Commissioner, Burma. On the 11th September 1905, he was appointed Inspector-General of Civil Hospitals, Bengal.

He is the author of various papers on "Preventive Inoculation in Cholera;" "Flies and Cholera Diffusion;" "Salol in Cholera;" "Cataract;" "Litholapaxy," etc.

Mr. HENRY MARSH, M.INST.C.E., C.I.E., is the third son of the late Francis Marsh, Esquire, J.P., of Spring Mount, Queen's County, Ireland. He was educated at Kingstown School, Ireland. Cooper's Hill, R.I.E. College, 1871-74. Passed



Hon. Mr. H. MARSH.

out of Cooper's Hill with first class honours in Mathematics. Mr. Marsh came out to India in the year 1874. He was appointed Assistant Engineer to the Public Works Department in that year. After seven years' service he obtained his grade as Executive Engineer in 1881. In 1897, he attained the grade of Superintending Engineer, and in 1902, he was appointed Chief Engineer and Secretary in the Irrigation Branch of the Public Works Department of the Government of the United Provinces. From 1903 to 1905, Mr. Marsh was a member of the Legislative Council of the United Provinces. He received the thanks of the Government of India and of the N.-W. Provinces for developments in the Irrigation systems of the Ganges and Jumna. For his distinguished services he was decorated with the Order of the Indian Empire. In the year 1905, the Hon'ble Mr. Marsh came under the fifty-five years' rule, and in the ordinary course would have retired from the service altogether. The Government of India were, however, unwilling to lose the services of so experienced an officer. In the Resolution upon the Report of the Irrigation Department of the United Provinces, by the Lieutenant-Governor, Mr. Marsh's name appears coupled with high encomiums. The Resolution states "Mr. Marsh possessed a remarkable power of inspiring his own enthusiasm in his fellow workers, and to him the Local Government is greatly indebted, not only for admirable administration of the Department and many improvements on the old canals, but also for a well-considered programme of extensions and new projects, especially in the dry tract of Bundelkhand." A way was found of retaining his services, and the Government of India through the Public Works Secretary wrote to the United Provinces Government offering Mr. Marsh the appointment of Consulting Engineer for Irrigation Works in Central India, a new post created under the general recommendation of the Irrigation Commission in 1903. Upon that report, the Government of India decided to arrange for an examination of the Irrigation resources of Central India, accepting the cost as an Imperial charge, and accordingly agreed to provide an experienced Irrigation officer to supervise and carry out the investigation for the whole Agency, and to work up irrigation projects in the Native States of Central India. The work required of the Engineer was to inspect the localities, and to assist, advise and supervise the State Engineers in selecting and investigating promising schemes, and in preparing estimates. The territories to be dealt with included the Native States comprised in the Central India Agency. This appointment was offered to Mr. Marsh and accepted by him. He has held it since his retirement from the regular service in September 1905. Mr. Marsh's recreations are sport, shooting, fishing. He played in International Football (Rugby) for England *v.* Scotland in the match of 1873. He is also a golf, cricket and tennis player.

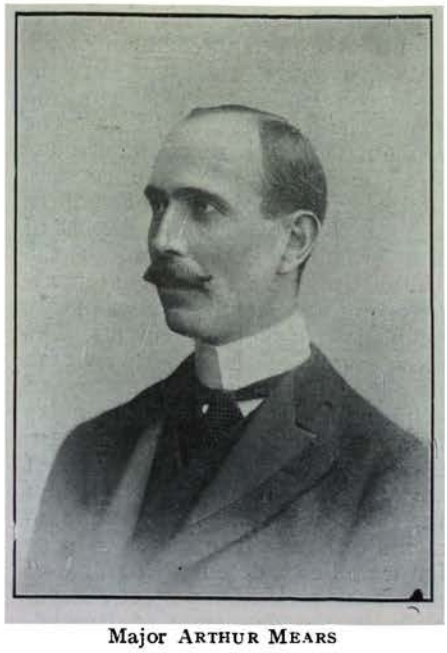
Mr. NICHOLAS MAUGHAN, A.M.INST.C.E., Deputy Executive Engineer, Drainage, Ordinary Branch, of the Bombay Municipality, was born in London in 1875, and educated at Westminster School and the Crystal Palace School of Engineering. On obtaining his certificate of the first class, for Engineering, he was articled in 1895 to Messrs. John Taylor, Sons, and Santo Crimp, Civil Engineers, Great George Street, Westminster. His articles completed, Mr. Maughan was

Mr. N. MAUGHAN.

appointed Resident Engineer, Enfield Water Works, New Pumping Station, in which appointment he served for one year. On the expiration of this he took up the duties of Resident Engineer, Main Drainage of Woking, in which connection a paper, written by Mr. Maughan has been published by the permission of the Council in the Minutes of the Institution of Civil Engineers. His next appointment was that of Resident Engineer, Ilford Drainage Works, serving there for a short period before joining his present appointment in January 1901. Prior to December 1906 the Drainage Department of the Bombay Municipality was divided into two branches, the Special for constructional work, and the Ordinary for maintenance and house connection work. Mr. Carkeet James, M.I.C.E., Deputy Executive Engineer, Drainage, Special Branch, resigned his appointment in 1906, and the Corporation decided to amalgamate the two branches under one Drainage Engineer. To this new post Mr. Maughan was appointed in December 1906 with the designation of Deputy Executive Engineer, Drainage, and is now therefore responsible for the construction and maintenance of all drainage works in the city and island of Bombay. Mr. Maughan is a Member of the Royal Sanitary Institute of London.

Mr. NORMAN FREDERICK McLEOD, Secretary to the Government of the United Provinces in the Public Works Department, Irrigation Branch, was born in 1856, and after completing his training at the Royal Indian Engineering College, he joined the Public Works Department of the Indian Government in 1878, and came out to India to join the service in November of the following year. His first appointment was as Assistant Engineer on the Ganges Canal, Meerut Division. He served through the various grades his service being mostly on the Ganges and Lower Ganges Canals, till as Executive Engineer, 1st grade, he was transferred to the Eastern Jumna Canal in 1902, whence he was transferred as Superintending Engineer to the 2nd Circle, Irrigation Works, in 1903. In 1905 he obtained the grade of Chief Engineer and was appointed Secretary to Government in the Irrigation Branch of the Public Works Department. In 1900 he was placed in charge of the Sone Canals Survey Division in addition to his other duties.

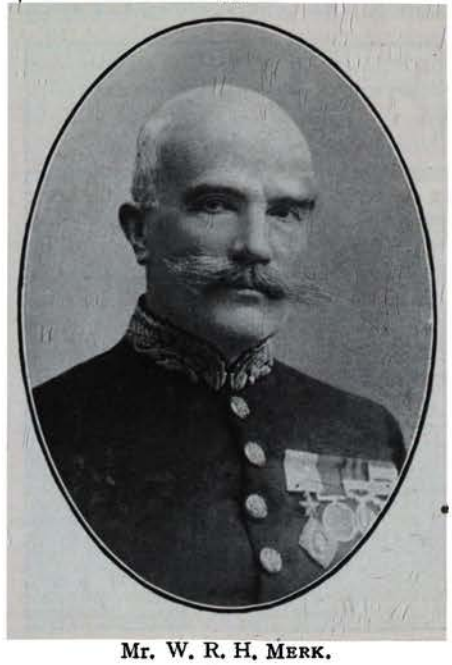
Major ARTHUR MEARS, I.A., Deputy Superintendent, Survey of India, was born in 1869, at Madras, and educated in London. He joined the Military College at Sandhurst in the year 1888 and obtained his commission in 1889. He was gazetted to the 1st Battalion, Royal Lancaster Regiment, on 30th January, 1889,



Major ARTHUR MEARS

but was subsequently transferred to the 2nd Battalion and proceeded to India. He was appointed to the Staff Corps in 1890 and attached to the 4th Madras Pioneers. He was Wing Officer of that Corps in 1892, and in the year 1895 was sent on special duty to Russia to study the Russian language. In 1897 he returned to duty as Wing Officer of the 2nd Madras Infantry, and on 21st November of the same year was appointed Assistant Superintendent, Survey of India. In 1898 Major Mears was attached to the Trigonometrical Branch at Dehra Dun, and later in the same year to the Cadastral Survey, Bengal. He remained with the Cadastral Survey till 1902 when he was attached to the Burma Forest Survey, with the rank of Deputy Superintendent in charge of No. 20 Party. Major Mears commanded a detachment of the 4th Pioneers on Field Service, Chin Hills, in 1891-92, with the Newengai Column, and received the medal and clasp.

Mr. WILLIAM RUDOLPH HENRY MERK, I.C.S., C.S.I., LL.D., eldest son of the Revd. J. N. Merk, C.M.S., was born at Simla in 1852, and was educated on the Continent of Europe and at King's College University of Aberdeen. He passed into the Indian Civil Service, taking third place, and proceeded to India in 1875. His first appointment was as Assistant Commissioner, and he spent three years in the districts of Rawal Pindi, Hazara, and Peshawar. In 1879 he was appointed Assistant Political Officer in the Khyber, and was present at the actions of Dakka and Mazima, and accompanied the Expedition to Beand, for which he was mentioned in the despatches, and received the medal and the thanks of the Government of India. In 1880 he was appointed Assistant



Mr. W. R. H. MERK.

Resident at Kandahar, which post he held till April 1881. He was then placed in charge of the Mardan Sub-Division of the Peshawar District, and in 1882 was appointed Under-

Secretary to the Punjab Government. In 1884 he joined the Afghan Boundary Commission under Colonel Sir West Ridgeway, with which he remained three years, returning to India in 1887. In the latter year he was invested with the Order of the Star of India with the rank of Commander. For the next five years he held charge of the Peshawar district, during which period he accompanied the Black Mountain Expedition of 1888, for which he received the medal and clasp. In the year 1892 he was deputed to take over the Kurram Valley with an escort of 2,000 troops. He remained in Kurram, settling the country, till 1894. During 1896 and 1897 he acted as Commissioner of Peshawar, and again saw active service in the latter year with the Mohmand Field Force which he accompanied as Chief Political Officer, for which he received medal and clasp. He was appointed Chief Secretary to the Punjab Government in 1899 and in the following year was posted to the Derajat as Commissioner. In November 1900 he was placed in charge of the Mahsud Blockade. This was brought to a successful issue in 1904. For this service he received the clasp. In 1904 he was appointed Commissioner of Multan, and in April of the same year, Chief Commissioner of the Andaman and Nicobar Islands. He reverted to the Punjab in 1906 and now holds the post of Commissioner of the Delhi Division. He received the degree of LL.D. from the Aberdeen University in 1900.

Mr. WALTER HENRY MICHAEL, I.C.S., late Accountant-General, Lahore, Punjab, was born in England in the year 1866. He completed his education in Neuenheim College, Germany, where he conceived the idea of entering the Civil Service. He spent two and a half years at Wren's and then went to Balliol College, Oxford. He came to India and joined the Civil Service at Madras as Assistant Magistrate in 1887. His services ranged over various districts for the first eight years, and he enjoyed some capital big game shooting in the Vizagapatam District. In 1894 he entered the Finance Department, and for about three years he served in the Accountant-General's Office, Madras. He was transferred to Calcutta in the capacity of Accountant-General early in 1898, where he remained till 1904. At the end of 1905, on his return from furlough,

Mr. W. H. MICHAEL.

he was appointed Accountant-General, Punjab, and in 1907 was transferred to Bombay as Accountant-General, which position he still holds. Besides being an adept in business matters, he is a keen sportsman, has done some racing, and also drives his own motor.

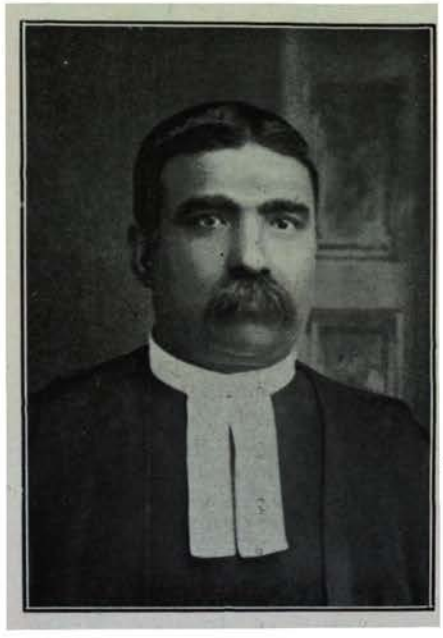
Mr. RAM CHARAN MITRA, M.A., B.L., Senior Government Pleader, High Court of Bengal, is the eldest son of Bono Mali Mitra, and was born at the village of Goda in the district of Burdwan, Bengal, in the year 1847. He received his education at the school which is now known as the Hare School, Calcutta; and from this school he passed the Entrance examination of the Calcutta University, being placed second in order of merit. He attended the Presidency College, and from this institution he passed the F.A. examination in the year 1864, being placed high up in the list of successful candidates. In the year 1866 he graduated B.A. of the Calcutta University, and in 1867 he passed the M.A. examination in Mathematics. He then took up the duties of assistant lecturer in Mathematics at the Presidency College, and subsequently attained the post of mathematical lecturer to the F.A. and B.A. students in the Sanskrit College. He declined an offer of a professorship in the Ajmere College in the year 1869, and, having passed the B.L. examination, commenced practice as a vakeel of the Calcutta High Court. He was appointed Tagore Law Lecturer in the year 1896, choosing as the subject of his course the Law of Joint Property and Partition in British India. In the year 1874 he had been appointed Assistant Government Pleader, which post he held till

Mr. R. C. MITRA.

the year 1899 when he was appointed to his present position of Senior Government Pleader. He has taken part in local municipal affairs, having been elected a Commissioner of the Calcutta Corporation in 1892.

The Hon'ble Dr. ASHUTOSH MOOKERJEE, LL.D. This distinguished Judge of the High Court of Fort William, and Vice-Chancellor of the University of Calcutta, is a member of a Brahmin family settled from time immemorial in Bengal. The family originally settled in Jeerut Balagar, a village on the Hooghly, whence Dr. Ganga Prasad Mookerjee came to Calcutta in the fifties to pursue his studies in medicine. He graduated at the

Calcutta Medical College, and thereafter settled down as a medical practitioner in Bhowanipore, a southern suburb of Calcutta. Dr. Mookerjee was a medical man of distinction in his day. His son, Dr. Ashutosh Mookerjee, was born at Bhowanipore in June 1864. At that time Bhowanipore was the centre of the law courts which were held in the present Military Hospital buildings, and the young Mookerjee grew up in an atmosphere which may be described as a legal one. To his father, young Mookerjee owed the foundation of his great store of learning. The undoubted disadvantages of an Indian education, which places too much reliance on mere book learning, were counteracted in Ashutosh Mookerjee's case by the care which his father bestowed on his education in his early years, instilling into him from his own wide experience those principles of independent thought that have made him the original thinker that he is to-day, and has been throughout his life. The same care followed Mr. Mookerjee all through his student life. Even while he was at school, the elder Dr. Mookerjee aided his studies with his own ripe wisdom. The consequence was that the future High Court Judge acquired knowledge far in advance of that usually imparted at school and college. At the age of twenty, Mr. Mookerjee attained his degree of Bachelor of Arts, and, continuing his studies in the same earnest spirit, in the following year took his Master's degree in Mathematics, and the next year was awarded the Premchand Roychand Scholarship of Rs. 8,000. In these years Mr. Mookerjee showed a brilliant capacity for the higher mathematics, and with a mind so stored there were many professions open to the young man. His efforts in these purely mental labours were more than local, and before he had attained his majority, his work in pure and mixed mathematics had reached the learned societies of Europe. His solutions of many abstruse mathematical problems have been incorporated in standard works, together with the best work of European scholars. But finally the law claimed the young scholar. He joined the City College for the purpose of studying law. Though to this subject he brought his usual energy, the result was not at first commensurate with his success in the calmer studies of mathematics. He carried off the Tagore Law Gold Medal on three separate occasions, but it must be acknowledged that at first his progress in the law was not as meteoric as his former career had been. He passed the examination of Bachelor of Law without much distinction, but the preparation of study bore fruit soon after, and his appearance at the Honours Examination of Law five years later, was the occasion of



The Hon. Dr. ASHUTOSH MOOKERJEE.

a masterly exhibition of acquirements which secured him the title of Doctor of Law. At this period Mr. Mookerjee was in his thirtieth year, and the following ten years marked rapid developments in his career He commenced to practise at the Calcutta Bar, and as a junior he was soon found to be an invaluable aid to leading Counsel, for the thorough and painstaking habits inculcated in him by his wise father made him the master of every case submitted to him. As in course of time he obtained opportunities of exhibiting his powers before the Bench, the issue was not long left in doubt, and it was found that he was able to hold his own against the ablest legal talent of the Calcutta Bar. In seven years he attained a leading position. Mr. Mookerjee gained all the honours open to him as practising counsel, and fifteen years after taking the gown he was appointed a Judge of the High Court which his forensic abilities had so adorned. In this short sketch it is not possible to do full justice to the many honours which the Hon'ble Mr. Justice Mookerjee has obtained in his not very lengthy life. Long years are left in which to add to them, for the learned Judge is still a student. He is a Fellow of the Calcutta University, appointed by Lord Lansdowne in 1889, and as a Member of the Faculty of Arts, has been one of its representatives on the Syndicate of the same University for fifteen years. He has been nominated by the University on two occasions as its representative on the Bengal Legislative Council, and a third time by the Calcutta Municipality. In 1904, he was elected to the Supreme Council by the non-official Members of the Bengal Legislative Council. As a legislator, Dr. Mookerjee is not in sympathy with the agitating cliques among his countrymen. His work for his country is of a more solid character than the airing of rhetoric, popular among public men of far inferior attainments to his; but as a champion of right in legislation, Dr. Mookerjee's services have been of a solid order and of infinite value to the material prospects of his country. He is a true patriot, working for the advancement of his community under the existing order of Government, which he recognizes as the best attainable till the country is really educated enough for a further share of freedom. As a profound and honest lawyer, he has placed his knowledge at the service of the public, and the result is shown in many an Act which would have been less perfect but for the keen skill in law and practical knowledge of the country which he has exhibited. With all this enlightened and comprehensive grasp of things as they are, Dr. Mookerjee is a typical Hindoo. He is no denationalised mixture of East and West, but he has recognized the possibility of being

true to his country and traditions, while standing forth with the leaders of thought either in Europe or Asia. He has never travelled in Europe, but is a brilliant exponent of Western knowledge, and at the same time is versed in the ancient lore of India. Hindoo metaphysics and Sanskrit literature are as familiar to him as the latest results of European research. Dr. Mookerjee has led too busy a life to have published much, but the output of his mind may be looked for in the future, of a certainty. Already he has made a commencement in a book on that abstruse and difficult subject, the "Law of Perpetuities," and his work on "Conic Sections" is now a text book.

Mr. WILLIAM MOOR, Secretary to the Municipal Board, Cawnpore, was born at Mussoorie in the year 1861, his father being the late Revd. Robert Moor, who was connected with the English Church at that station. Mr. William Moor received his education partly in India and partly in the West Indies, at Demarara. He entered business in the sugar trade of South America,

Mr. W. Moor.

but left that country in the year 1886, coming to India, where he secured the position of Secretary to the Gorakhpur Municipality and remained two years. In the year 1888 he was appointed to his present position. Mr. Moor is one of the founders of the Civil Lines Tennis Club, the most popular club in Cawnpore, and acts as Secretary of that institution. He became a Freemason in 1893, joining Lodge Harmony, E. C., 438. He has passed through all the Chairs and was, for 1907, Worshipful Master. He has been very active in the cause of plague prevention in Cawnpore, and his services in this connection have been recognized as very valuable.

Mr. CHARLES TURNER STEVENSON-MOORE, I.C.S. Mr. Stevenson-Moore entered the

Mr. C. T. Stevenson-Moore.

Indian Civil Service on the 19th September, 1887, arriving in India on 10th December of the same year. His first substantive appointment was at Midnapore, where he served as Assistant Magistrate and Collector till June 1889. He was thence transferred to Rampur Hat, and in the following five years served at Jhenida, Magura, Jessore, Raniganj, Burdwan, Buxar, Shahabad, Patna and Chittagong, as Assistant Magistrate. In 1891 he officiated as Magistrate and Collector, Jessore, and in the year 1894 he was appointed to this same district as Assistant Settlement Officer. He attained substantive rank as Settlement Officer of Muzaffarpur, Gya, in 1896, and subsequently became Settlement Officer of Champaran, Saran, and Darbhanga; was promoted Joint Magistrate and Collector in the same year, and in 1898 he was appointed Magistrate and Collector, 3rd grade. Mr. Stevenson-Moore availed himself of furlough in 1899, after completing the settlement operations in Muzaffarpur and Champaran. In the following year, on his return to duty, he was appointed as Junior Secretary to the Board of Revenue, and a year later as Magistrate and Collector of the 24-Parganas, and was confirmed in his appointment as Magistrate of that district in 1903. In 1902 he acted as Commissioner to the Presidency Division. While at Alipur, Mr. Stevenson-Moore helped to establish a school for European children, and was Chairman of the Management Committee. He also introduced an arrangement in Mill Municipalities, under which the Mills and Municipal Committees combined in defraying the cost of supplying filtered water within the municipal area. He initiated a comprehensive scheme for draining the low-lying lands of Diamond Harbour Sub-Division.

In 1904 he was appointed to his present post as Inspector-General of Police, Lower Provinces, and the introduction of the reforms recommended by the Police Commission became his special task.

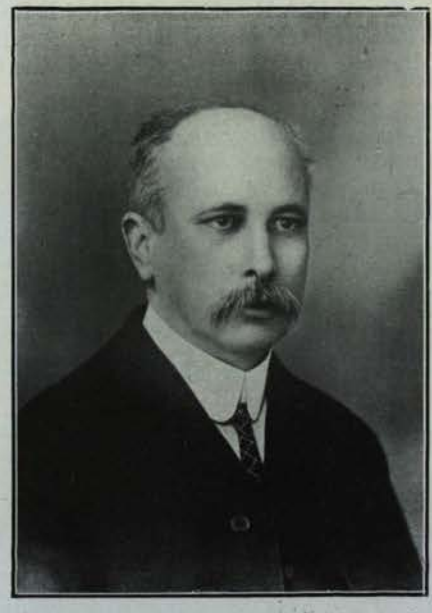
Mr. NILAMBARA MUKARJI, Vice-Chairman of the Corporation of Calcutta, is the third son of the late Pundit Debnath Mukarji, a man of high character and considerable literary ability. He was born at Kooliaraunghat, District Jessore, near Calcutta, on 3rd December 1842. He is one of the most distinguished graduates of the University of Calcutta, taking first class honours at the first examination of the University for the degree of M.A. in Sanskrit in 1865, and graduating B. L. in 1866. He was enrolled as a vakeel (pleader) of the Calcutta High Court and shortly afterwards joined the Bar of the Punjab Chief Court. While practising at Lahore, his talents and learning attracted the notice of His Highness the Maharaja of Kashmir who appointed him Chief Judge of the State in 1868. Subsequently he started the silk industry in Kashmir, which rapidly developed and expanded under his direction,

and he was favoured with the commendatory notices of the Government of India and the Secretary of State, and was rewarded by His Highness the Maharaja with a valu-

Mr. NILAMBARA MUKARJI.

able pair of golden bangles, with an inscription in Persian, and a *Sanad*, in recognition of his valuable services. He was held in high esteem by the Maharaja for his ability, zeal, unimpeachable honesty and single-minded devotion to the performance of his onerous duties, and was promoted to the post of Finance Minister. As a faithful and trusted councillor he was enabled to introduce most important and much needed reforms in the administration of the State. He resigned his service in 1886. In 1896 he was elected Vice-Chairman of the Calcutta Corporation, in which capacity he has gained the approbation of successive Chairmen and the Commissioners, as well as that of the Government, by his integrity and characteristic devotion to duty.

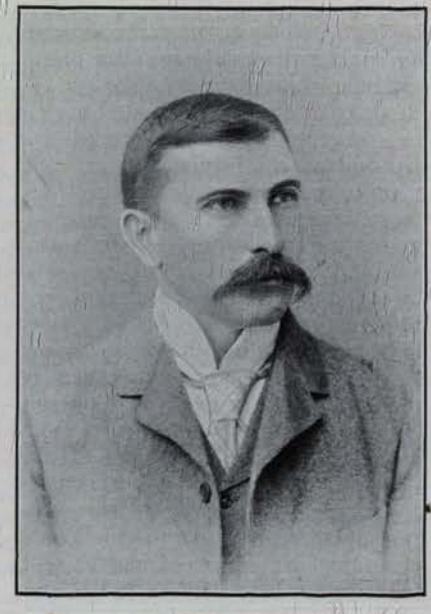
Mr. ROBERT HENRY NIBLETT, M.A., J.P., Deputy Collector, 1st grade, and Sub-Divisional Magistrate, in charge of the Mussoorie Sub-Division of the Dehra Dun District. Mr. Niblett was born in the year 1859 in India and educated at the Boys' High School and Muir College, Allahabad. He took his degree as Master of Arts at Calcutta University in 1881, and attained Honours in Physical Science. In the same year he was appointed Head Master of the Boys' High School, Naini Tal. From 1882 to 1884 he served as assistant editor of the North-West Provinces Gazetteer, part of which time he was under the Hon'ble Mr. (now Sir) J. P. Hewett. In March 1884, he was appointed Honorary Deputy Collector, Allahabad, and joined the regular service as Deputy Collector,



Mr. R. H. NIBLETT.

7th grade, on 13th March 1885. He has served in the different grades of Deputy Collectors till the present time. On the 19th October 1904, he was appointed to Mussoorie to the appointment above noted.

Mr. FREDERICK OSCAR OERTEL, Superintending Engineer, Provincial Works, Lucknow, was born in Hanover on the 9th December 1862. After receiving a general education in Germany he came to India and joined the Roorkee Engineering College in 1881, where he qualified for Government service. He was first posted, in 1883, to the Imperial Circle of Public Works at Simla. In 1884 he was transferred to the North-West Provinces and was sent to Roorkee, and later to Agra, as an Assistant Engineer. From Agra he was transferred in 1885 to Orai, to construct a portion of the Indian Midland Railway. In 1887 he proceeded to England to give a finishing touch to his practical knowledge, and for this purpose studied in London and made extended tours in England, France, Germany, and Italy. After passing, in 1888, the professional test, he became an Associate of the Royal Institute of British Architects. On his way to England he was wrecked, on the 17th April 1887, near the coast of Corsica, while on board the P. and O. steamer *Tasmania*. He returned to India at the end of 1889 and was re-posted to Agra, where he had to prepare the Jaipur Kothi for the reception of H. R. H. the Duke of Clarence. In 1890 he went to the Seebpore College in Bengal to act as a Professor of Engineering. In 1891 he was attached to the P. W. Secretariat in the North-West Provinces, where he remained for several years on special duty. He was then posted, as District Engineer, to Naini Tal and later, after a short term in the Irrigation Branch, was appointed Executive Engineer of the special Ayarpatta



Mr. F. O. OERTEL.

Division in Naini Tal. He travelled all over India to study oriental architecture, and was deputed to assist in making a survey of the ancient buildings of Burma. In the

year 1900, at the request of the Colonial Government and the Royal Asiatic Society of London, he went to Ceylon to report on the preservation of the ancient Buddhist monuments at Anuradhapura and Polunaruva. On return to India he was first posted to Jhansi, and then to the Benares Provincial Division. At Benares he excavated, in 1904-05, the ancient site of Sarnath, the birthplace of Buddhism, where various valuable buildings, sculptures, and inscriptions were laid bare, including an Asoka column inscribed with one of the famous Edicts. In the year 1905 he was posted to the Agra Provincial Division where he took part in the restoration of the Taj and the other ancient Moghul buildings, and helped in the arrangements for the reception of T.R.H. the Prince and Princess of Wales in 1905, and of the Amir of Afghanistan in 1907. In April of the latter year he was posted to Lucknow to act as Superintending Engineer. In addition to being a Fellow of the Royal Institute of British Architects, Mr. Oertel is an Associate Member of the Institution of Civil Engineers and a Member of the Royal Asiatic Society of London.

Mr. C. E. A. W. OLDHAM, I.C.S., Director of Agriculture,

Mr. C. E. A. W. OLDHAM.

Bengal, was born in Galway in 1869, and was educated in Galway, London, and Balliol College, Oxford. He joined the service in October 1890, and served as an Assistant Magistrate and Collector acting as Magistrate-Collector in 1892, 1894 and 1895, for short periods. In 1895 he was appointed Under-Secretary to Government, officiating as Secretary to Government in the Financial and Municipal Departments in 1897. Omitting short terms of special duty, Mr. Oldham next served as a District Officer, holding charge of the Gaya District for five years, and of Monghyr for nearly two years. He was placed on special duty in connection with the Agricultural Department in September 1905. For his services in connection with plague in Gaya he was awarded the Kaiser-i-Hind medal of the first class in 1902.

Mr. FREDERICK PALMER, M.INST.C.E., M.AM.SOC., C.E., C.I.E., was born in 1862. He commenced his engineering career as an articled pupil on the Great Western Railway, South Wales Division, and was Assistant Engineer on that Railway for a short time before his appointment, in 1883, to the East Indian Railway as Assistant Engineer. He was attached to the Head Office in Calcutta for over five years and was then made Resident Engineer on the survey for the "Grand Chord Line."

In 1891, after nearly two years' furlough, he was given the appointment of Personal Assistant to the Chief Engineer, and early in 1893 was promoted to be District Engineer in charge of the Allahabad Division, attaining that rank in less than ten years' service.

On January 1st, 1896, he was appointed Engineer-in-Charge of the survey for the Mogul Serai-Gaya Extension of the East Indian Railway, and subsequently was given charge of the construction of this line. The work included the building of a bridge over the River Sone, which, with a total length between abutments of 10,044 lineal feet (nearly two miles), is believed to be the second longest river-bridge in the world; that over the Tay in Scotland being but a few feet longer. The construction of the Sone Bridge was commenced on February 22nd, 1897, and the official opening took place exactly three years later, on February 22nd, 1900. Both the bridge and the railway were completed within the estimated cost. In 1899, the construction of

Mr. FREDERICK PALMER.

the Barun-Daltonganj branch (80 miles) was added to Mr. Palmer's already heavy duties.

On the completion of the Sone Bridge, Mr. Palmer was again in England on leave for nearly two years, and while there was offered the appointment of Chief Engineer to the Port of Calcutta. In December 1901 he entered upon his new duties and rapidly proceeded with the extension of the accommodation of the Port. He has just completed a scheme for new docks at Garden Reach, and the extension of other facilities, sufficient for the needs of the rapidly increasing trade of the Port for many years to come.

Mr. Palmer was elected an Associate Member of the Institute of Civil Engineers in 1890, and transferred to the class of Member in 1896; in which year he was also elected Member of the American Society of Civil Engineers.

Mr. EDWYN HERMANN PARGITER, Chief Engineer and Secretary, Irrigation Branch, Punjab, Public Works Department, Lahore, was born in Ceylon in 1853. He was educated at the Taunton College School, Somersetshire, Eng-

land, and at the Royal Indian Engineering College, Cooper's Hill, whence he passed out in 1874, third in order in the final list of that year. He was appointed Assistant Engineer, Public Works Department, Punjab, and came to

Mr. E. H. PARGITER.

India in the same year. In 1883 he was promoted to Executive Engineer, in 1900 to Superintending Engineer, and in March, 1906, was appointed Chief Engineer and Secretary to Government, Punjab. The whole of his service has been in connection with Irrigation Works in the Punjab.

Mr. WALTER PARRY, M.INST.C.E., London (also Member of the Liverpool Engineering Society), Municipal Engineer, Cawnpore, was born and educated at Liverpool, and served his articles with the late Mr. Charles H. Beloe, M.INST.C.E., Civil Engineer of that city. His first appointment was in the Engineering Department of the Birkenhead Municipality in which he remained for three years, and afterwards with the Sheffield Corporation. In 1885 he proceeded to India to take up an appointment with the Corporation of Calcutta in connection with the extension of the water supply. After three years, on the completion of that work, he joined the Allahabad Municipality as Water Works and Municipal Engineer. He remained in this appointment for six years, after which he was appointed by the Government of Bengal to the Howrah Water Works, which appointment he held for two

Mr. WALTER PARRY.

years and a half. On the expiry of this period he was offered and accepted his present position in charge of water works, sewerage, etc., at Cawnpore, where he has charge of all the engineering works and conservancy of that town. Mr. Parry became a Member of the Institution of Civil Engineers in the year 1895, having previously been an Associate Member.

Mr. R. M. PATELL, M.A., LL.B., Advocate, High Court, Chief Judge of the Presidency Court of Small Causes, Bombay, was born in Bombay on 27th August 1846. He was educated at the Elphinstone College, Bombay, and practised as a Pleader in Bombay from the year 1874. In January 1894, he was appointed 2nd Judge of the Court of Small Causes, and in 1897-8 acted as Assistant to the Legal Remembrancer. He officiated as an Acting Chief Judge on four occasions, up to the year 1905, and in the year 1906 was appointed Chief Judge, which post he still holds. For nearly 30 years he was Honorary Secretary to the J. N. Petit Institute, of which he is now Honorary Life Member and Vice-President. He is a Fellow of the Bombay University and was elected a Syndic in Arts for three years.

Mr. CHARLES FREDERICK PAYNE, I.C.S., Deputy Chairman of the Corporation of Calcutta, was born in 1875 at Bromley, Kent (England), and is the son of Mr. Frederick Payne of that place. He received his education at St. John's School, Leatherhead, and Brazenose College (Oxon), where he took his B.A. degree. He joined the Indian Civil Service

Mr. C. F. PAYNE.

on the 25th October 1898, and arrived in Calcutta on the 6th December of the same year. Since that time he has been posted to the Nadia, Patna and 24-Parganas districts. He has held his present appointment since October 1904.

Lieut.-Colonel DOUGLAS CRAVEN PHILLOTT, Secretary, Board of Examiners in Oriental Languages, Calcutta; Honorary Secretary, Asiatic Society of Bengal; Vice-President, Esperanto Society, Calcutta; Vice-President, Hindi "Ek-Lipi" Society; Honorary Adviser, Buddhist-Shrine Restoration Society; Gold Medallist in Persian. Colonel D. C. Phillott is the fourth son of the late Lieut.-Colonel Henry

Rodney Phillott, and was born in London in 1860. He was educated at Felsted, and joining the Royal Military College, Sandhurst, passed out with Honours. He was gazetted on 14th January, 1880, to the 40th Foot (2nd Somerset L. I.) then in India. He also served with the 28th Punjab Infantry, and was subsequently appointed to the 3rd Punjab Cavalry, on the 27th March, 1887. He saw active service with the Zhob Valley Field Force in 1890, and again when he was appointed Deputy Assistant Quartermaster-General, Intelligence, Hazara Field Force, 1901, for which he received the medal and clasp. On the North-West Frontier of India he

Lt.-Col. D. C. PHILLOTT.

took part in the action of the Ubhlan Pass and operations on the Samana and in the Kurram, 1897, medal and two clasps. He twice officiated as Recruiting Staff Officer for Pathans, and was for two years H. B. M. Consul at Kirman and Bundar Abbas, Persia. Colonel Phillott has travelled extensively in the East. His contributions to literature are translations for the Government of India of several military works into the Indian vernaculars; he has also edited many Persian texts. He is the author of various papers on Philology and Ornithology in the "Journal" and "Memoirs" of the Asiatic Society of Bengal, and translator from the Arabic of the "Nafhat-ul-Yaman" (in the press), and from the Persian of Bāz-Nāma-yi Nāsiri" (in the press). Recreations, hawking and travelling. Address: Indian Museum, Calcutta. Clubs: Junior Naval and Military, Piccadilly; and United Service, Calcutta.

Mr. LUDOVIC CHARLES PORTER, Collector and Chairman of the Meerut Municipality, United Provinces, was educated at Eton and Trinity College, England, and joined the service on 9th October 1889, arriving in India on the 8th January 1890. He was posted to Hardoi as Assistant Commissioner, and after having served as Assistant Magistrate, Collector and Joint Magistrate in various centres, he was appointed City Magistrate, Lucknow, in 1895. He also held this post in other divisions up to 1898, when he took furlough. On his return in 1899 he again served as Joint Magistrate and officiated as Deputy Commissioner at Muttra, Cawnpore and Gonda, up to 26th April 1906, when he was appointed Deputy Commissioner, Fyzabad, and in February 1907 was posted to Meerut as Collector.

Mr. WILLIAM RICHARDSON ERETH PURVES, Deputy Collector, Magistrate and Treasury Officer, Naini Tal, is the son of the late William Purves, Government service. He was born at Agra on the 5th October 1857, and was educated at La Martinière College, Lucknow. Mr. Purves' first employment was as a junior master at Allahabad High School. He entered Government service in 1877 after six months of scholastic life. In 1891 he was promoted to a gazetted appointment from Head Clerk, and appointed to officiate as Deputy Collector. In 1897 he was made substantive in the appointment of Deputy Collector, in which grade he served at various stations before being transferred to his present post at Fatehgarh. Mr. Purves is the author of a Handbook on Ready Reference to Preparation and Check of Award and Compensation for Appropriation under Act X of 1870 (the Land Acquisition Act); published in 1877.

Mr. JAMES THOMSON RANKIN, I.C.S., Secretary to the Board of Revenue, was born in 1871 and educated at Glasgow and Edinburgh. He joined the I.C.S. in 1892 and proceeded to India the same year. On arrival he was appointed Assistant Magistrate and Collector at Chittagong. He served in this grade at Cox's Bazar, Jalpaiguri, Buxar and Sasaram. In 1898, he was appointed to act as Magistrate and Collector of Tippera, and in February 1899 he was posted in the same capacity to Dacca, where he remained till confirmed in the grade of Magistrate and Collector in 1905, when he was transferred to Calcutta and appointed Junior Secretary to the Board of Revenue. In

Mr. J. T. RANKIN.

the same year he was promoted to his present post of Secretary to the Board of Revenue in the new Province of Eastern Bengal and Assam, and stationed at Dacca.

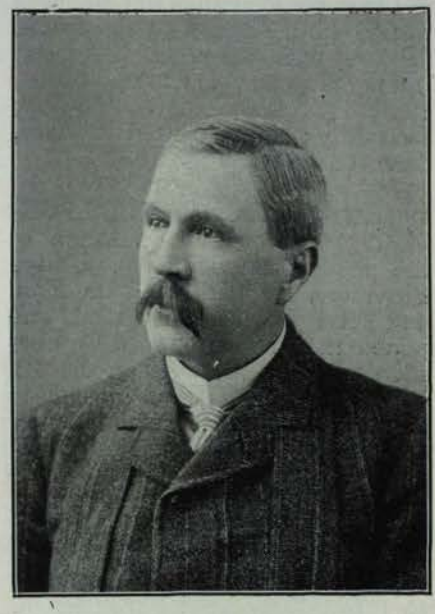
Hon. Mr. Justice ARTHUR HAY STEWART REID, M.A., Bar.-at-Law, Judge of the Chief Court, Lahore, Fellow of the Allahabad University and of the Punjab University, was born on the 10th October, 1851, and is the second son of the late Henry Stewart Reid, B.C.S., Member of the Board of Revenue, North-West Provinces, 1868-81. He was educated at Harrow (1864-69), and Trinity Hall, Cambridge (1869-72).

B.A., 1872; M.A., 1885. Called to the Bar, January 1874, Inner Temple. Practised in India from 1875. Professor of Law, Muir Central College, Allahabad, from January 1883, and Officiating Public Prosecutor and Standing Counsel (Government Advocate), North-West Provinces, 1895. Officiated as Judge, Punjab Chief Court, from April to September 1896, and was confirmed as Judge of that Court in September 1896. Officiated as Chief Judge in

Hon. Mr. Justice A. H. STEWART REID.

1899, 1902 and 1906. Married, 1897, Imogen, daughter of the late Sir Cecil Beadon, K.C.S.I., Lieutenant-Governor of Bengal.

Mr. CHARLES SKRYMSHER RENNICK, who was born in London in 1858, received his education at University College School (London) and the Royal Indian Engineering College, Cooper's Hill. He came out to India in November 1881 and was posted to Rajputana as an Assistant Engineer under the Local Administration. Early in 1884 he was transferred to the Railway branch and served up to 1901 as an Assistant Engineer and Executive Engineer on various divisions of the North-Western Railway. From 1902 to 1906 he was employed on the survey and construction of the Allahabad-Fyzabad and Allahabad-Jaunpore Railways. In October 1906 he was appointed Deputy Consulting Engineer, Lucknow Circle.



Mr. C. S. RENNICK.

Hon'ble Mr. Justice H. G. RICHARDS, K.C., M.A., Trinity College, Dublin, Judge of the High

Hon'ble Mr. Justice RICHARDS.

Court, Allahabad, son of the late John Henry Richards, Chairman of Quarter Sessions, County Mayo, and grandson of the Right Hon'ble John Richards, Attorney-General of Ireland, Baron of the Court of Exchequer in Ireland, and First Commissioner of the Encumbered Estates Court. Mr. Justice Richards is a Member of the Irish Bar, which he joined in 1883. In 1904 he was appointed one of His Majesty's Counsel in Ireland, and in 1905 was made a Puisne Judge of the High Court of Judicature of the North-West Provinces. He is a Fellow of the Allahabad University. Since his arrival in India he has identified himself with the Volunteer movement and is Commandant of the Allahabad Volunteer Rifle Corps.

The Hon'ble Mr. Justice FREDERICK ALEXANDER ROBERTSON, Bar.-at-Law, Judge,

Hon. Mr. Justice ROBERTSON.

Chief Court, Punjab, Lahore, was born in the year 1854 and educated privately and at King's College. He came to India in 1876 and was appointed Assistant Commissioner, Lahore. In 1882 he was deputed to Rawalpindi as Forest Settlement Officer, and became Settlement Collector in 1885. On return from furlough in 1888 he was employed on special duty on the Maler Kotla Settlement operations. In the following year he officiated as Director of Land Records and Agriculture, in which appointment he was subsequently confirmed. In 1896 he was appointed Divisional Judge; in December 1898 he became Additional

Judge, Chief Court, and was appointed as permanent Judge, Chief Court, in 1904. His literary works are *Customary Law of Rawalpindi District; Final Reports of Revised Settlement*, and ***Report on the Forest Settlement of the Rawalpindi District.*** He has been a keen supporter of cricket; acted as Honorary Secretary to the Punjab Cricket Club for some years, and is a member of the M. C. C. and other cricket clubs, and of the Royal and Ancient Golf Club, St. Andrews. He is also interested in philanthropic work, and is President of the Y. M. C. A., Lahore.

Mr. SYDNEY MADDOCK ROBINSON, Bar.-at-Law, Legal Remembrancer to Government, Punjab, Lahore, was born in the year 1865, at Karachi, India, and educated at the Cathedral School, Hereford, and Brasenose College, Oxford, where he took his B. A. degree in January 1888. He was called to the Bar, Middle Temple, on 26th January 1888 and came to Lahore, Punjab, India, in the same year. In 1889, he officiated for the Junior Government Advocate and was appointed Public Prosecutor, Lahore

Mr. S. M. Robinson.

and Ferozepore Division, in 1891. He officiated as Junior Government Advocate annually until 1899 when he was appointed Government Advocate. He is sub. *pro tem.* Legal Remembrancer to the Punjab Government and Secretary to the Legislative Council of the Punjab.

Mr. ALFRED EDWARD RYVES, B.A., Government Advocate, High Court, Allahabad, son of Major T. J. Ryves, late Deputy Inspector-General of Police, United Provinces, was born at Allahabad in the year 1865. Mr. Ryves received his education in England, at Clifton College and Trinity College, Oxford. He was called at the Middle Temple in November 1888. He came to India and was enrolled an Advocate of the Allahabad High Court in January 1889. In 1891 he proceeded to Dehra Dun, and subsequently

Mr. A. E. Ryves.

practised at Saharanpur, but returned to Allahabad in 1894. In 1898 he was appointed Officiating Government Advocate for a year. After two short officiating terms he was appointed Government Advocate, sub. *pro tem.* in 1901 and finally confirmed. He officiated as First Additional Judicial Commissioner, Lucknow, for a period of seven months in 1905. Mr. Ryves has been associated with Freemasonry since the year 1901, and has passed the Chair in the 18th degree. He is at present Worshipful Master of Lodge Independence with Philanthropy, No. 391, E. C.

Mr. HENRY SAVAGE, C.S.I., I.C.S., was born in 1854, at Bolton in Westmoreland, and educated at the Liverpool Institute. He passed the Indian Civil Service Examina-

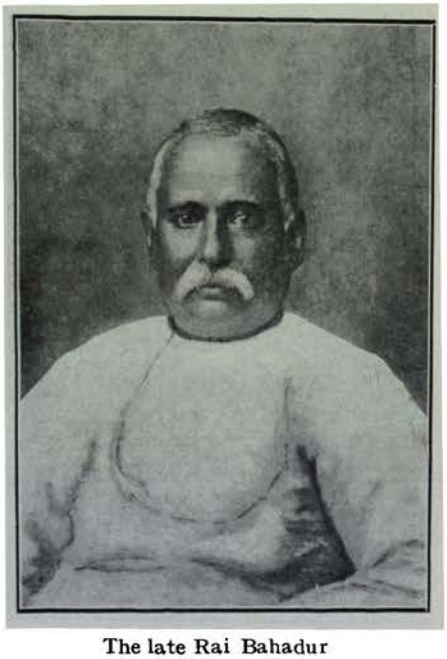
Mr. H. Savage.

tion direct from school, in 1872, and arrived in India in October 1874. He served as Assistant Magistrate, Joint Magistrate or Collector in many of the districts of the Province of Bengal, and in 1896 became Commissioner of the Dacca Division. In 1904 he was on special duty in connection with the improvement of village administration and village police, and in the same year was appointed a Companion of the Order of the Star of India. On the formation of the new Province of Eastern Bengal and Assam, he was appointed Senior Member of the Board of Revenue in that Province, a post which he still holds.

The late Rai Bahadur RAM SANKAR SEN, Deputy Magistrate and Deputy Collector of the first grade, and Member, Bengal Legislative Council, was born on the 16th July 1829, at Pooran Matta, near Dacca, in East Bengal. He came from a distinguished Vaidya family (Medical caste), and was fifth in descent from Raghu Ram Sen, Minister to the Mahomedan Governor of Dacca. He was educated at Comilla English School, and at Dacca College, where he carried off several scholarships

and prizes, as well as gold medals for literature. He passed both the Junior and Senior Scholarship Examinations of the pre-University days with the highest credit, and received the gold medal for library reading, which is equivalent to the present day Premchand Roychand Scholarship. In after-years his college record was publicly alluded to by Dr. Mouat, the Secretary to the Council of Education, on the occasion of a prize distribution. He commenced his career as a lecturer at the Dacca College, and from here he went as Head Master to the Chittagong School. In 1858 he was appointed Deputy Magistrate and Collector and was employed in the districts of Chittagong and Noakhali, where he did good service in carrying out the reforms introduced under Act X of 1859. His work in this connection attracted the attention of the Board of Revenue, and received an acknowledgment from His Honour the Lieutenant-Governor of Bengal. He was then placed in charge of Kishorganj and Ranaghat, both very disturbed sub-divisions in those days; and his method of dealing with organised crime in these districts again attracted the notice of his superiors. Mr. C. T. Buckland, I.C.S., placed it on record that Ram Sankar Sen was "the best Indian Deputy Magistrate in Bengal." In 1869, he was offered the Dewanship of the Cooch Behar State by Sir Ashley Eden, but refused, for domestic reasons. In December, 1871, the Viceroy, Lord Mayo, visited Ranaghat on his way to a shoot, and Mr. Sen received His Excellency with proper state, for which he received thanks, by command, from Major-General Sir Owen Tudor Burne, the Military Secretary. In 1872, he was deputed to Jessore on special duty, to collect agricultural statistics. For this service he received special notice in the annual report of Government. His report was pronounced to be very valuable and interesting by Sir George Campbell, the then Lieutenant-Governor of Bengal, and was circulated as a Government paper. The report was noticed in very favourable terms by the press. In 1874, he was appointed a relief officer in connection with the Behar Famine, and received special mention for his work from Sir Richard Temple.

. In the same year he was again placed on special duty in connection with the registration of holdings in the Government Estate of Panchannagram in the Suburbs of Calcutta. In 1876, Mr. Sen was appointed a Member of the Bengal Legislative Council, which office he held for two years, assisting in the enactment of several important laws affecting the Municipal and Revenue administration of the country. He was invested with the title of "Rai Bahadur" on the occasion of the assumption of the Imperial title by the late Queen-Empress Victoria, in recognition of "his loyal conduct and services." In 1877 he was awarded the Delhi



The late Rai Bahadur
RAM SANKAR SEN.

Imperial Assemblage medal by the Lieutenant-Governor of Bengal. In 1878, he became a member of the Central Examination Committee and Vice-Chairman of the District Road Cess Fund of the 24-Perganas. In 1883, he was deputed to enquire into the abuses prevailing on the Calcutta and Eastern Canals. As a result of these enquiries a committee was appointed, consisting of Mr. A. W. Paul, I.C.S., Mr. D. B. Horn, Executive Engineer, and Mr. Sen, to frame a scheme for the better management of the canals. His last appointment under Government was that of Magistrate of the Sealdah Police Court, Calcutta. He retired on the 16th July, 1886, with an honourable record of service lasting over 35 years. He declined the offer of the office of Prime Minister to the Bikanir State shortly before his retirement. In 1887 the Rai Bahadur was granted a special pension by the Secretary of State in consideration of his "long distinguished and unusually meritorious service." He was appointed a Presidency Magistrate in 1889. In private life he was very popular with all classes and was a distinguished leader of Indian society. He died on the 26th January, 1898, and a public meeting, with the object of taking steps to perpetuate his memory, was held at the Calcutta University Institution, presided over by Sir Cecil Stevens, K.C.S.I., Officiating Lieutenant-Governor of Bengal, who, among other things, said that, had Mr. Sen lived a few years later, he would certainly have found a place in the ranks of District Magistrates.

The late Mr. Sen had three sons :—(1) Mr. G. Sen of the Inner Temple, Bar.-at-Law, Advocate of the Calcutta High Court, who pre-deceased his father in 1890. Issue, three sons, of whom the eldest, Mr. Prafulla Sankar Sen, M.A, is Deputy Collector and Sub-Divisional Magistrate of Gaibanda in Eastern Bengal and Assam. Another one Nikhil is in England studying for the Bar, while the second son Amudya is studying in India.

(2) Mr. Juan Sankar Sen, P.C.S., Eastern Bengal and Assam, is the chief Manager of the Bhowal Raj in Dacca. His eldest son, Mr. N. Sen, M.A., is in the Provincial Civil Service of Bengal.

(3) Mr. Hem Sankar Sen, an Assistant in the Political Department of the Bengal Secretariat.

Residences :—Bewtha in Manikganj Sub-Division, Dacca, and 63, Upper Circular Road, Calcutta.

The Hon'ble Mr. Justice MOHAMED SHAH DIN, B.A., K.B., Bar.-at-Law, Judge, Chief Court, Punjab, Lahore, was born in the year 1868. He comes of a distinguished and ancient family, known as the Mian family of Baghbanpura in the District of Lahore. He was educated at the Mission High School, Lahore, where he ma-

triculated, and subsequently at the Lahore Government College where he graduated in the Faculty of Arts in 1887, in which year he left for England to study for the Bar, and joined the Middle Temple. After going through the usual course of legal instruction, he was called to the Bar in June 1890. As a law student he distinguished himself in England by obtaining, after severe competitive tests, a scholarship at his own Inn, and several prizes offered by the Council of Legal Education. Returning to Lahore, he was enrolled as an Advocate of the Chief Court, Punjab, in 1891, and as such enjoyed a lucrative practice for sixteen years, being appointed a temporary addi-

Hon. Mr. Justice M. SHAH DIN.

tional Judge of the Chief Court in December 1906. Endowed, as he is, with great natural gifts and a marked intellectual activity, the engrossing pursuits of the legal profession did not absorb all his energies, and before his appointment to the Chief Court he stood out in public life as the most prominent Mahomedan in the Punjab, and, as such, impressed his personality upon numerous educational, social, and political movements.

He was appointed a Fellow of the Punjab University in 1893 and has been a Syndic for the last ten years. He was elected President of the ninth Session of the Mahomedan Educational Conference held at Aligarh in 1894, and was appointed a Trustee of the M. A. O. College, Aligarh, in 1896. He is the President of the Young Men's Mahomedan Association, Lahore, a member of the Committee of the Punjab Public Library, a member of the Committee of Management of the Victoria Jubilee Institute (Punjab), and a Fellow of the Punjab Association, of which he is also an Honorary Secretary in conjunction with Sir David Masson and Mr Justice Chatterjee. He represents the Mahomedan community on the Committee of Management of St. John's Ambulance Association (Indian Branch). He was appointed a member of the Punjab Legislative Council in 1903, for a term of two years, and was re-nominated in 1905, but had to resign his seat in 1906 owing to his appointment as a Judge of the Chief Court. While in England he had the honour of a presentation at Her late Majesty's Levée in 1889. He also in the same year, in collaboration with a few other Indian Mahomedans, founded the Anjuman-i-Islamia, London. In recognition of his manifold public services Government conferred on him the title of Khan Bahadur in 1906.

The Hon'ble Mr. Justice SYED SHARFUDDIN. Among the Followers of the Prophet who have had the distinction of being raised to a High Court bench, not the least remarkable is the Hon'ble Mr. Syed Sharfuddin, Barrister-at-Law. Though for many years he has been the leader of the Behar Bar, he has not allowed the whole of his energies to be absorbed by professional duties, and has always found time to take an intelligent part in public affairs. He is a cheery, simple, unaffected, genial man, who has a way with him of disarming hostility and of winning the regard of those who come in contact with him. He is an effective speaker and a man of a pre-eminently cool judgment.

He belongs to an ancient Syed family. The head of the family, Syed Hussain Khing Sawar, came to India, in 1174 A.D., two years before the invasion of Shahabuddin Ghori. He commanded an important section of Shahabuddin's forces against Prithvi Raja in the battle of Thaneswar, where the Hindu power fell in India. As a reward for his services, he was made Commander of the Taragarh hill fort in Rajputana, where he died fighting in 1210 A.D., in repelling a night attack of the combined bands of the Rathors and Chauhans. Sir W. W. Hunter has noticed the incident in the last volume of the *Imperial Gazetteer*.

Mr. Sharfuddin was born at Neora, on the 10th September 1856, and is the youngest son of Syed Farzand Ali, Pleader of Chapra. He was educated at the Patna Collegiate School. As his elder brother, Syed Nassiruddin, had already joined the executive branch of the Provincial Civil Service as a Deputy

The Hon'ble Mr. Justice S. SHARFUDDIN.

Collector, he was sent to England to qualify for the Bar. It is to be remembered that the late Sir Syed Ahmed's visit to England in 1869-70 had greatly removed the prejudices of Mahomedans against sending their sons to that country for education. Mr. Sharfuddin joined the Middle Temple, and was called to the Bar in 1880. He belonged to a happy band of young Behari Mahomedans, the other members of which were Mr. Nurul Huda, District and Sessions Judge, Pubna, and Mr. Abul Hasan Khan, Small Cause Court Judge, Calcutta, both of whom were called to the Bar in the same year as Mr. Sharfuddin. On his return to India

he began to practise in the Calcutta High Court, but as private affairs demanded his continuous presence nearer home, he left Calcutta and finally set up his practice at Bankipore. Soon he established a name for himself in Behar. In criminal cases of any importance he was almost invariably retained for one of the parties. His cross-examination was a terror to the tutored witness. His painstaking habits, combined with his forensic abilities, made him an almost ideal counsel. By the time the late Sir John Woodburn came to rule at Belvedere, Mr. Sharfuddin was looked upon as leader of the Behar Bar, and as a most likely candidate to fill a vacancy on the High Court bench. But chances came and he was passed over. His claims, however, had already been brought to the notice of Government by Mr. Halliday and Sir James Bourdillon. But it was not till Mr. Ameer Ali's successor had been chosen that it became apparent that a prejudice existed against Mr. Sharfuddin on account of his being a member of the "Mofussil Bar."

Mr. Sharfuddin is a man of many-sided activities and has been ever ready to help a *primâ facie* good cause. He has been an ardent admirer of the Indian National Congress, a strong advocate of the Nadwat-ul-Ulama and a staunch supporter of the Aligarh College. Mr. Hamid Ali Khan of the Lucknow Bar and Mr. Sharfuddin of Behar were the only two men of position among the Mahomedans of Northern India who differed from their co-religionists in politics and warmly espoused the Congress cause. He was a prominent member of the Mahomedan Deputation which waited on the Viceroy in 1906; and took an active part in the preparation of the address presented by that body to His Excellency.

Mr. Sharfuddin has always taken a warm interest in the education of his community. In his view *no* education is complete which ignores religion. Holding these opinions it is not surprising that he should have found it possible to promote the interests of the Nadwah at the same time that he has identified himself with the cause of the Aligarh College. The local Islamia School at Patna is not a little indebted to his energy and purse. It was mainly through his exertions that the annual meeting of the Nadwah was held in 1900 at Patna. His co-religionists did him the honour of electing him President of the All India Mahomedan Educational Conference, which met at Dacca in December 1906.

Nor has he confined himself to advancing the cause of his own community. As Vice-Chairman of the Patna District Board, he held office for three successive terms for a total period of nine years. In many an annual report have the Local Government expressed their appreciation of the work which Mr. Sharfuddin did in that capacity. As Municipal Commissioner, his work was second to none. On the Universities Act of 1904 coming into force, he was nominated a Fellow of the Senate of the Calcutta University. He was the Honorary Secretary of the Behar Landholders' Association, the members of which are mostly Hindus, and was unanimously elected in 1905 to represent that body on the Bengal Legislative Council.

Khan Saheb SORABJI SHAVAKSHA, B.E. (Bachelor of Engineering), Engineer, Executive

Khan Saheb SORABJI SHAVAKSHA.

Irrigation Branch, Public Works Department, was educated at Seebpur College, Calcutta, where he passed his examination in the year 1886, gaining the gold medal in Mathematics. He was the first Parsee gentleman to pass out from that college. He joined Government service in 1887, and was appointed Assistant Engineer and posted to the Calcutta Division. In 1892 he was transferred permanently to the North-West Provinces and Oudh, now the United Provinces, and in the same year he joined the Irrigation Branch and was posted to the Lower Ganges Canal. He served as Assistant Engineer in various stations till 1898, when he was appointed Executive Engineer, 3rd grade, attaining the 1st grade in the year 1905. He is now in charge of the Cawnpore Division of the Lower Ganges Canal.

Mr. W. D. SHEPPARD, who succeeded Mr. W. L. Harvey as Municipal Commissioner of Bombay in March 1905, was appointed in May 1901 to act in the same capacity when Mr. Harvey went on leave. Mr. Sheppard joined the Indian Civil Service in October 1886, arriving in Bombay in December of the same year after completing his education at New College, Oxford. His first experiences in Indian administration were as Assistant Collector and Magistrate in Belgaum and Kanara, in which latter district he was, in January 1892, appointed Forest Settlement Officer. We next find Mr. Sheppard officiating on frequent occasions as Collector and Magistrate and District Registrar, Kanara, until July 1894, when, in addition to his other duties, he was appointed to act as Assistant Political Agent in the Southern Maratha Country. Early in 1896, Mr. Sheppard was transferred to Dharwar as Collector, and subsequently to Bijapur, as Personal Assistant to the Collector, where, as colleague to Sirdar G. D. Pase, he successfully dealt with a famine of intense severity. From January 1898, he was again in Kanara, acting as Collector and Magistrate and District Registrar. On his return from short leave in September 1898, he was transferred to Poona, at which place he officiated as Collector and Magistrate and District Registrar, and in addition was Political Agent for the Bhor State. He went to Europe

on a year's furlough in 1900, but was recalled before his leave expired, to act for Mr. Harvey, as previously stated, in the Bombay Municipal Commissionership in May 1901.

In August 1902, on the return of Mr. Harvey, Mr. Sheppard went on

Mr. W. D. SHEPPARD.

furlough, returning to India in March 1904, when he was once more appointed Collector of Poona. This post he has resigned in order to resume the duties of Municipal Commissioner of Bombay, a task for which Government, in view of his past services, consider him especially fitted.

Ray Rayan RAM ANUGRAH NARAYAN SINGH, Presidency Magistrate, Calcutta, is descended from the ancient Ray Rayan zemindar family of Badalpura in the District of Patna. This family came originally from Upper India. They have been landholders for two centuries past. The loyal services of Mr. R. A. N. Singh's great grandfather, Ray Sita Ram Singh, during the Indian Mutiny of 1857 are well known and were fully recognized by the Government at the time. He was selected for the Native Civil Service by Sir George Campbell, Lieutenant-Governor of Bengal, and successfully passed the N. C. S. examination in the higher grade. Upon passing his examination Mr. R. A. N. Singh was appointed Manager of the Court of Wards and Deputy Collector in the District of Saran. In 1880 he reverted to his appointment of Deputy Magistrate, which he owed to Sir Ashley Eden. He served the Government with zeal and ability for many years in the districts of the Patna Division, and his services were on several occasions specially recognized by the authorities. He was mentioned in the printed Resolution on the General Administration Report of the Patna Division for 1891-92, also in the Revenue Board's printed Report on Land Revenue Administration for 1902-03, in the printed Census Report of the Patna Division for 1891, and in the printed Report on the Indian Famine Relief Fund in Bengal, 1897-98. In the years 1877 and 1903 he obtained a Certificate of Honour from Government for his loyalty and public spirit, and in 1887 he received the Jubilee Medal. In 1904, Sir Andrew Fraser, Lieutenant-Governor of Bengal, brought him down to Calcutta and placed him in charge as Magistrate of the Sealdah Police Court, and in the following

Mr. R. A. N. SINGH.

year appointed him Third Presidency Magistrate for the town of Calcutta. Mr. R. A. N. Singh, as the representative of his family, is a landed proprietor of independent means and administers a very solvent property. His services as a zemindar were publicly recognized by the Government of Bengal in the Resolution on the Annual Administration Report of the Patna Division for 1875-76. He is one of the best class of officials, and has earned the reputation of a just and able magistrate while on the Calcutta Stipendiary Bench. There is a brief sketch of his family history in the second volume of Ghose's "History of Rajahs and Zemindars."

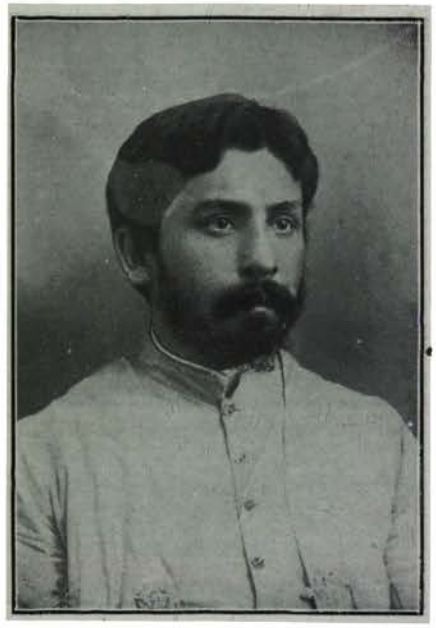
Lieut.-Colonel JULIAN C. SMITH, M.B., C.M. (Edin.), I.M.S., Civil Surgeon, Meerut, United Provinces, was born in India on 7th August 1854, and educated at the Aberdeen and Edinburgh Universities. He took his degrees in 1877, entered the service on the 31st March 1879 and came to India the same year. He was on active service for eleven years and won a medal and two clasps in the Second Afghan War, 1879-80, and the Burma War, 1886-87, respectively. He joined civil employ in 1884 and has remained in the United Provinces, serving in various districts as Civil Surgeon. He was appointed to Meerut District in 1902 and is Health Officer, a Police Officer, as well as Superintendent of the District Jail. He is a member of the British Medical Association.

Mr. EDMUND DUCANE SMITHE was born in 1853, and educated at Shrewsbury School (1864-1868). He served his engineering apprenticeship in Norway, and completed his training at the Royal Indian Engineering College, Cooper's Hill. In October, 1875, he was appointed to the Public Works Department, and after his arrival in India he served in various capacities in the Punjab Irrigation Branch. He was promoted to the post of Executive Engineer in December 1883. In 1895 he was transferred to the Buildings and Roads Branch, Punjab, and appointed Under-Secretary, P. W. D. He became Sanitary Engineer to the Punjab Government in 1900, and was appointed Chief Engineer and Secretary, P. W. D., in October 1903. Mr. Smithe has passed the Higher Standard in Punjabi and Pushtu, and is a Member of the Institute of Civil Engineers.

Mr. LOUIS STUART, I.C.S., District and Sessions Judge, Meerut, U. P., was born in 1870, in Calcutta, and educated at Charter House, and Balliol College, Oxford. He came to India in 1891, and after being stationed as Assistant and Joint Magistrate in various districts, he entered the Judicial Service in 1897, as Officiating District and Sessions Judge, Fyzabad. He has also served as Small Cause Court Judge, Dehra Dun. He officiated as District and Sessions Judge in Fyzabad, Sitapur, Benares, Allahabad and Fatehgarh, and was subsequently Special Judge under the Bundelkhand Encumbered Estates Act in the Jalaun District during practically the whole of the operation of the Act. He was promoted as permanent District and Sessions Judge in 1906, has since again served in Sitapur, and was transferred to Meerut in March 1907. The Meerut Judgeship has jurisdiction over all civil and criminal cases in the District of Meerut and Muzuffernagar. The staff is a large one, consisting of one District and Sessions Judge, one Additional District and Sessions Judge, one Assistant Sessions Judge, one Subordinate Judge, and seven munsifs (Civil Judges of the lowest grade). The staff also includes about twenty-eight stipendiary magistrates, who are also to some extent subordinate to the magistrates of the two districts, and six benches of honorary magistrates. The population of the two districts was, at the last census, about two millions and-a-half, and the work of the Judgeship is heavy, the population being both wealthy and litigious.

Mr. LOUIS STUART.

Mr. KSHITINDRA NATH TAGORE, Secretary to the Municipality of Howrah. Mr. K. N. Tagore comes of a distinguished Bengali family, being the great-grandson of the late Dwarkanath Tagore, who was one of the first Bengali merchants to fall in line with Western methods of commerce and attained the position of the pioneer merchant prince of India. Mr. Tagore's grandfather, Maharshi Debendra Nath Tagore obtained distinction in the world of thought. He instituted great reforms in the religion of his community, being one of the founders of the pure Theistic hierarchy known as the Brahmo Somaj. He became the patriarch of that body of earnest Indians. Mr. Tagore was born in the year 1869, and was educated at the Government Sanskrit College, Calcutta, and graduated from the Presidency College in the same city in the year 1880. He followed in his grandfather's footsteps in his work for the Brahmo Somaj, and in 1892 he was appointed Honorary Secretary to the Adi Brahmo Somaj or Original Theistic Church founded by the late Raja Ram Mohun Roy. The onerous duties of this post, he discharged with conspicuous ability and tact. In the year 1897, he was appointed as Assistant Secretary to the Municipality of Howrah, which is the most important provincial Municipality in Bengal. After over a year of work in this capacity, he was promoted to the Secretaryship of the same Municipality. He has been very highly commended in the successive Administration Reports on the working of the Municipality, the latest notice of his work being as follows :—"Mr. K. N. Tagore, the Secretary, has a special talent for office management, s an untiring worker and most zealous for the interests of the Municipality. He has brought the office to a high state of efficiency and I (the Chairman) am personally indebted to him for much useful advice in connection with the administration of the affairs of the Municipality." Mr. Tagore, in addition to his public duties, has found time to devote himself to literature and is the author of the first critical treatise on the Bhagabadgita in Bengali. In this



Mr. K. N. TAGORE.

he has followed original lines, evincing considerable research and critical acumen. In addition to this valuable work, he is the author of several books which have considerable literary merit. Among these are numbered "*Arya Ramair Siksha o Swadhinata*," "*Adhyatma Dhurma o Agneyabad*," "*Raja Harishchandra*" and others.

Mr. J. MACKAY TAYLOR, C.E., Executive Engineer, Meerut Division, Ganges Canal, Irrigation Department, was born in 1861 at Ootacamund, Southern India, and educated at Bishop Cotton's School, Bangalore and Simla. He passed the First Arts Examination, and on leaving school joined the Thomason Engineering College at Roorkee, whence he passed out with high distinction in the year 1882. He entered the service of Government in the Public Works Department, and was first posted as Assistant Engineer to the Buildings and Roads Branch of that Department, in which he remained till 1885. During this period his service was in the Punjab. In

1885 he was deputed to the Railway Service and joined the Kalka-Simla Railway Survey Division, in which he remained for two years. He was next employed on the survey and

Mr. J. MACKAY TAYLOR.

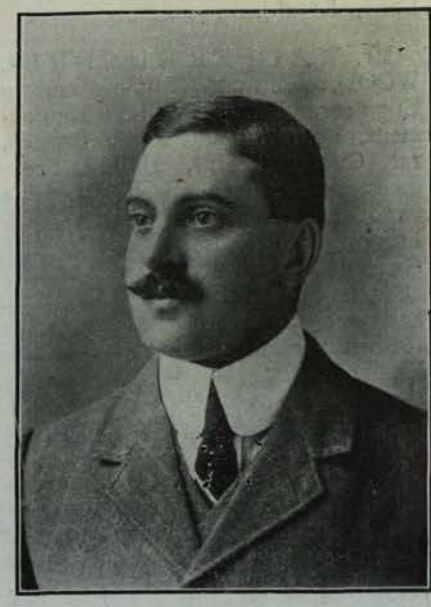
construction of the Patiala-Bhatinda Railway until the completion of the line in the year 1889, when he returned to the Punjab Roads and Buildings Department of the P.W.D. After a spell of furlough Mr. Taylor exchanged to the United Provinces in 1892 and joined the Irrigation Branch. He was posted at this time to the Anupshahr Division of the Ganges Canal, and in the following year was transferred to Aligarh. In the year 1895 he was gazetted as Executive Engineer and posted to the charge of the Narora Division of the Lower Ganges Canal. He served here till 1898 when he again took furlough. In the following year he was placed in charge of the Cawnpore Division of the Ganges Canal and here he remained for two years, when he again went on leave on private affairs for six months. On his return to duty he was given charge of the Upper Division of the Eastern Jumna Canal, Saharanpur, where he remained till 1902, when he again went on furlough. On his return in 1903, he was transferred to the Agra Canals, and later on, in the same year, he was placed in charge of the Meerut Division, Ganges Canal, which post he has held ever since. Mr. Mackay Taylor received the thanks of Government for special services in connection with the widening of the Cawnpore branch of the Ganges Canal, and again for his services in the Raipur escape of the Eastern Jumna Canal. He was specially commended for his work on the Patiala-Bhatinda Railway. Mr. Mackay Taylor has qualified in the Higher Standard in Urdu, in Canal law, and in the Lower Standard in Pushtu.

Mr. WILLIAM TUDBALL, I.C.S., Sessions Judge, Cawnpore, was born at Kalian, Bombay, in the year 1866. He is the son of the late Charles Tudball, D. T. S., on the Bombay, Baroda and Central India Railway. He was educated at Bedford Modern School, and Christ Church, Oxford. He joined the Indian Civil Service, passing second in the open competition in 1885. He arrived in India in 1887, and was first posted to Bareilly as Assistant Magistrate and Collector. He worked through the various grades,

Mr. W. TUDBALL.

being in turn posted to Jhansi, Budaun, Shahjahanpur, Bara Banki, Pilibhit, Aligarh and Meerut, officiating as Judge and also as District Magistrate, till appointed Assistant Commissioner, 1st grade, when he took furlough out of India. On return he was permanently appointed Joint Magistrate and shortly afterwards Deputy Commissioner. In 1904 he was promoted to District and Sessions Judge at Gorakhpur, and in 1906 was transferred, in the same capacity, to Cawnpore.

Captain ALBERT ELIJAH WALTER, I.M.S., Superintendent, X-Ray Institute, India, was born in the year 1872 at Plymouth and



Capt. A. E. WALTER.

educated at Plymouth College and Middlesex Hospital. He took his degrees of M.R.C.S. and L.R.C.P. in 1896. He was Senior Demonstrator of Physiology and Biology at Middlesex and subsequently practised privately for two years in partnership with Dr. B. T. Lowne, F.R.C.S., at Crookham, Hampshire. In 1899, Captain Walter joined the Indian Medical Service, and in the same year proceeded to India. In the course of his service he was with various regiments until the Boxer disturbance in China. He went with the Expeditionary Force and took out with him an X-Ray apparatus. He remained in China for two years, and at the expiry of that period returned to India. On his return he was put on special duty in connection with X-Ray work until the formation of the X-Ray Institute, which took place in 1906. About three years ago Captain Walter was sent to Europe on six months'

special duty, to study X-Ray work, and visited Paris, Berlin and Milan, as well as the principal hospitals of London and the Provinces of England He is the second son of Mr. E. Walter, J.P., of Churston Manor, North Devon, and is married to the second daughter of Sir Charles Leslie, Bart., C.B. He has published one literary work, "X-Rays in General Practice" (John Lane, Lond.).

Mr. WALTER GUNNELL WOOD, A.M.I.C.E., Superintending Engineer, Public Works Department, Buildings and Roads Branch, 1st Circle, Meerut, United Provinces, was born in England in October 1861, and educated at Wellington College and Cooper's Hill. Having successfully passed out in 1882, he came to India the same year and was posted to the Provincial Railways at Mathra as Assistant Engineer, for the construction of the Bridge over the Jumna. In 1886 he joined the Buildings and Roads Branch, Public Works Department, North-West Provinces, and for six years, from 1898, he served as Under-Secretary to the

Mr. W. G. Wood.

Government of the North-West (now the United) Provinces, in the Buildings and Roads and Railway Branches. For six months, in 1903, he held the post of Superintending Engineer, and again reverted to his previous post as Under-Secretary to Government, United Provinces. In 1904 he was appointed Superintending Engineer, Meerut. He has designed most of the important new buildings in the United Provinces, *i.e.*, the Judicial Commissioner's Court buildings and the Husainabad School at Lucknow; the Aligarh new Court buildings; the Bareilly College and Boarding House; the Meerut College; the new Kotwalis at Benares, Moradabad and Lucknow, and many others. He is an Associate Member of the Institution of Civil Engineers, London, and a keen and successful sportsman.

Mr. ROMER EDWARD YOUNGHUSBAND, B.A., Bar.-at-Law, Commissioner of the Lahore

Mr. R. E. Younghusband.

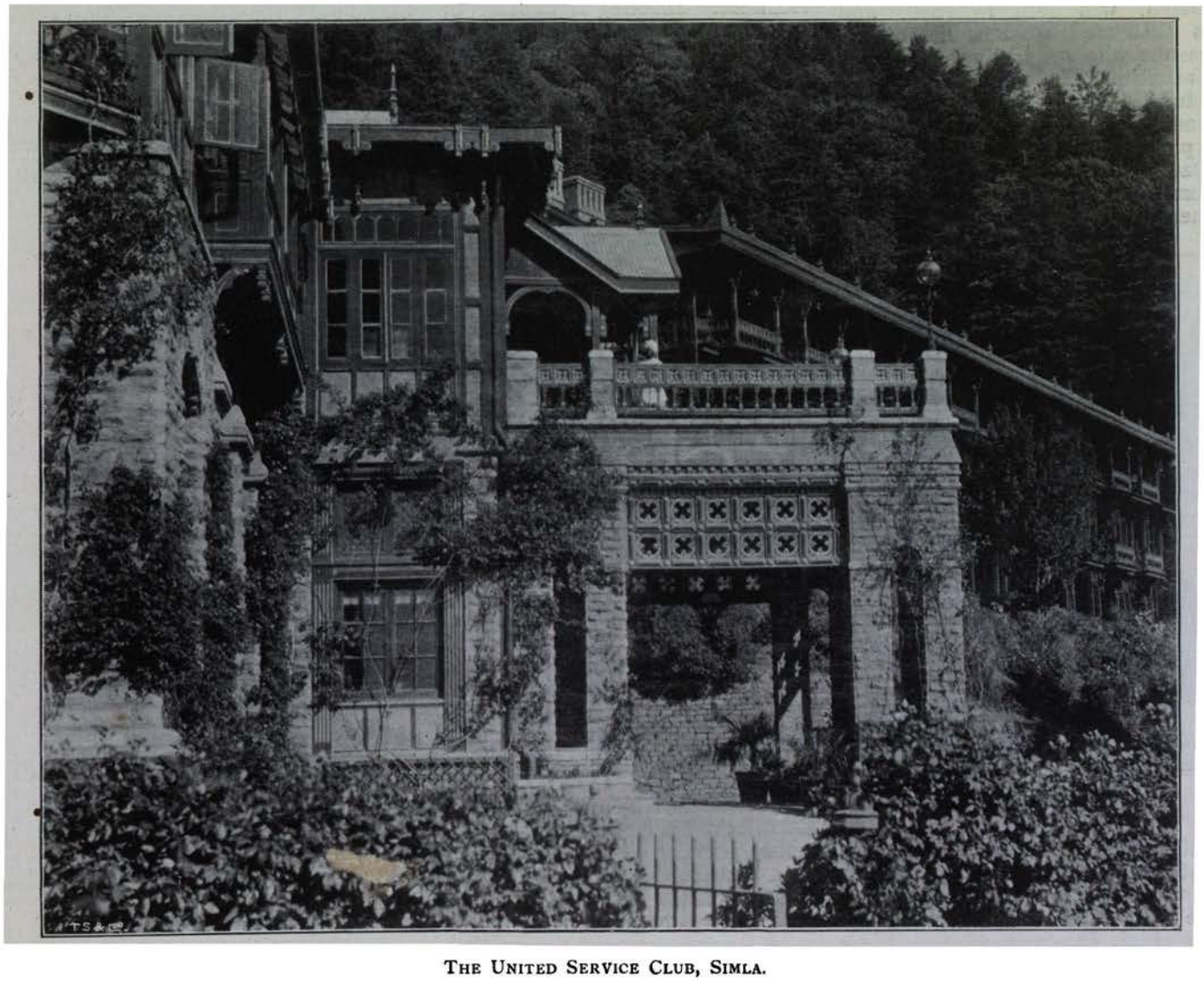
Division in the Punjab, was born in the year 1858 at Freshford, near Bath, and was educated at Rugby School, Clifton College, and Balliol College, Oxford. He joined the Indian Civil Service in 1879 and came to India in December the same year, and was first posted to Delhi as Assistant Commissioner, in which capacity he served in many districts of the Punjab. He worked as Junior Secretary and Senior Secretary to the Financial Commissioner, and also as Under-Secretary to the Punjab Government up to the year 1888, when he was appointed Under-Secretary to Government, Punjab. After returning from furlough in 1889, he was appointed to officiate as Deputy Commissioner of Dera Ghazi Khan, and was on special duty in connection with the Settlement of the Western Boundary of the Gurchani tribes in March 1893, officiating as Secretary to Government the same year. He afterwards served as Deputy Commissioner of Bannu and Peshawar Districts. In 1897 he accompanied the Tochi Field Force as Chief Political Officer, for which he obtained a medal with clasp. In 1905, he was appointed Commissioner of the Lahore Division. He is a son of the late General R. R. Younghusband, C.B.

Mr. JOHN ZORAB, Executive Engineer, 1st class, Calcutta Divi-

Mr. J. Zorab.

sion, Public Works Department, Bengal, was born at Calcutta in 1868 and received his education, [illegible] at the Calcutta Martinière, proceeding to England later. He passed into Cooper's Hill in 1890 and came back to India in the following year. He was first posted as Assistant Engineer to the Chota Nagpur Division. In 1892 he was transferred to Darjeeling, and again to the Buxar Division and Balasore. In 1896 he was employed

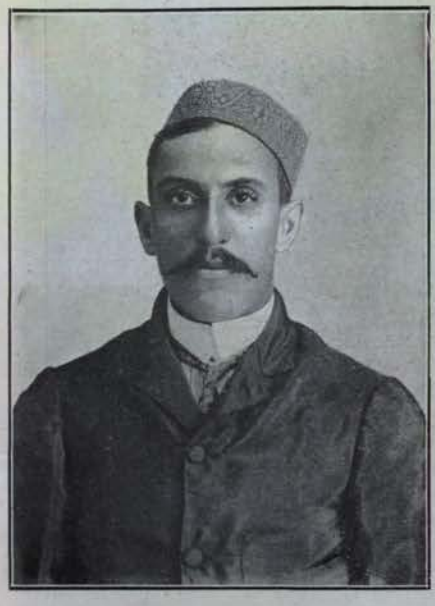
on famine duty, serving successively in the Darbhanga and Eastern Sone Divisions. He was transferred to Brahminy-Byturny Division in the following year and obtained his officiating appointment as Executive Engineer, when he was appointed to Aquapada-Jajpur Division. His next charge was Balasore, and in 1904 he was placed in charge of Mozufferpore, whence, in August 1905, he was transferred to his present appointment and took charge of the First Calcutta Division.



THE UNITED SERVICE CLUB, SIMLA.

Indian Nobility & Gentry.

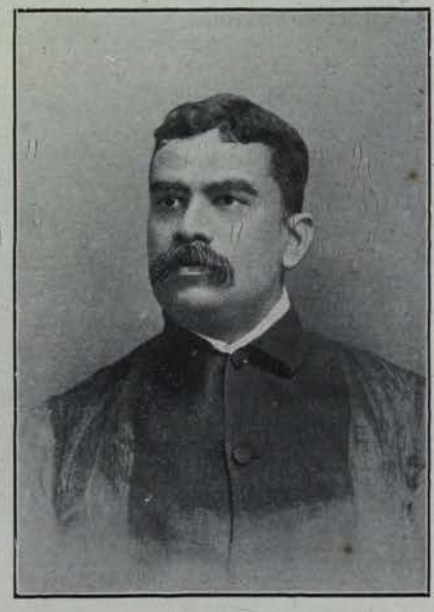
Mr. K. BADERUDDIN AHMAD, Dacca, was born in 1876, and is descended from a line of ancestors who originally came from Cashmere. He received a home education in Arabic, Persian, Urdu and English. In 1905 he was appointed a member of the Dacca District Board, and in the same year he received his appointment as Honorary Magistrate of the



Mr. K. Baderuddin Ahmad.

Sadar Independent Bench of Dacca, and was nominated a Commissioner of the Dacca Municipality in 1906. He was married at the age of 26 to the eldest daughter of the third wife of the late Nawab Sir Ahsanulla, K.C.I.E., of Dacca. Mr. Baderuddin Ahmad is devoted to sport of all kinds; he is a keen polo and hockey player and keeps a good stud of horses for his recreations. Shooting is another of his relaxations, and he has a reputation at billiards. He is a member of the Dacca Amusement Club. He is well known locally as a good sportsman and gentleman, and exerts considerable influence in the town of Dacca.

Mr. GOKUL CHAND BURAL, Zemindar, Calcutta, is the youngest son of the late Rai Prem Chand Bural, Bahadur. He received his education at the Hindu School, Calcutta. He is distinguished for his philanthropy and devotes his life to charities of many descriptions. Among many important benefactions with which his name is associated may be mentioned the founding of the Dwarekasram at Khurda near Barrackpore, where free food is daily distributed among the poor and pilgrims. He has also taken naturally to medical science and is a great patron of the Suksma Ayurvedic System of Medicine, founded by Mr. B. B. Batabyal of Calcutta. He distributes medicines free every day to poor patients. He is a great upholder of practical training of all kinds, and never fails to give his aid to any practical scheme of this description. At his residence, No. 8, Hidaram Banerjee's Lane, Calcutta, he dispenses princely hospitality, and his keen appreciation of sterling qualities has made his place a rendezvous for literate men in Bengal. He is also a Freemason. Babu Gokul Chand is happily married to the only daughter of the late Dwarka Nath Law, the proprietor of Messrs. Bisso Nath Law & Co., of Calcutta, and has issue, three sons, Bolie Chand, Doonia Chand and Nirmal Chand; and three daughters, Provabati, Bhagabati and Padmabati. He has made the phrase "Live for others" the motto of his family. He is the Honorary Secretary to the Bow Bazaar Government Aided Higher Class English School, Honorary Treasurer to the Vidyasagar Widow Marriage Association, Hon-



Mr. G. C. Bural.

orary Auditor to the Subarna Banick Somati, and member of the Executive Committee of the Calcutta Deaf and Dumb School.

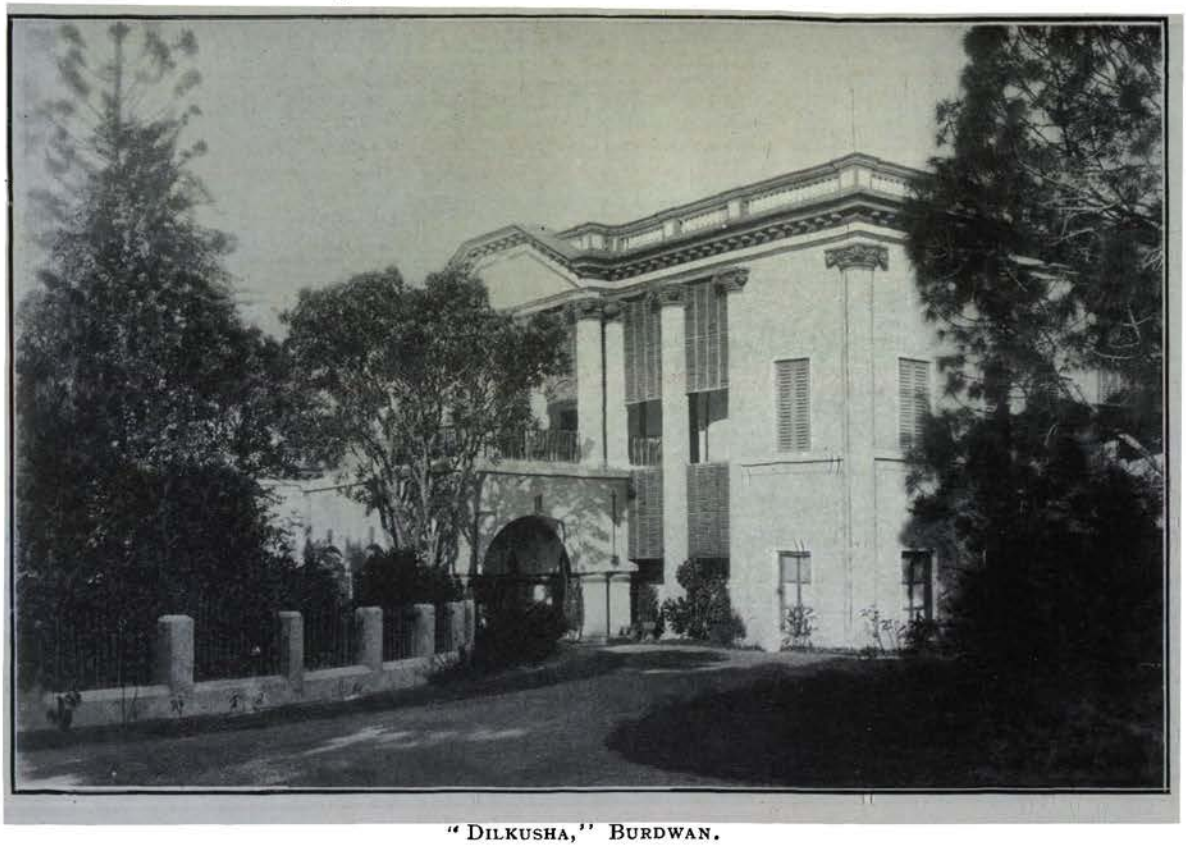
The BURDWAN RAJ FAMILY. —This ancient and powerful family dates its rise in Bengal from the beginning of the 17th century. The founder of the House of Burdwan was Abu Rai of Kotli, in Lahore,

who came from the Punjab at about that period to settle at Burdwan. The family did not spring into importance all at once. The six descendants and successors of Abu Rai, *viz.*, Babu Rai, Ghanasham Rai, Krishna Ram Rai, Jagat Ram Rai, Kirti Chander Rai and Chitra Sen Rai, nursed and developed the estate left by him, and added largely to its extent by acquiring further lands in the neighbouring districts. The seventh descendant of Abu Rai, Tilak Chand Bahadur, who came into possession of the estate in the year 1744, however, made his mark on contemporaneous history. He was one of the most famous members that the House has produced and attained to high favour with the Emperor of Delhi. By this monarch, Tilak Chand was created "Raja Bahadur" and "Master of 4,000 Infantry and 2,000 Cavalry," and this honour was finally increased by the Emperor to that of "Maharaj-Adhiraj Bahadur" and "Panch Hazari" or Commander of 5,000 Infantry and 3,000 Cavalry, to which was added authority to keep guns and to use martial music. Maharaj Tilak Chand Bahadur's distinguished career lasted 27 years. He died in the year 1771 and was succeeded by his son, Tej Chand Bahadur. In the meanwhile the whole of Bengal had passed under British rule under the Honourable East India Company, and subsequently the vast estates of the Burdwan Raj were brought within the operations of Regulation I of 1793, the basis of the Permanent Settlement.

THE PALACE, BURDWAN.

Maharaja Pratap Chand, the son of Tej Chand Bahadur, who died during the lifetime of his father, acted as Regent for some time. He was the inventor of the "Patni" tenure, from which the great "Patni" law took its rise (Regulation VII of 1819). Maharaja Tej Chand Bahadur had an exceptionally long career, occupying the "Gadi" for 60 years. He died in 1831. His legitimate son, Maharaja Pratap Chand, having died during his lifetime, Maharaja Tej Chand had recourse to the Hindu Law of Adoption, and was succeeded on the "Gadi" of Burdwan by his adopted son, Mahtab Chand, who became one of the most noted of the Maharajas of Burdwan. On his succession he was immediately recognised as Maharaj-Adhiraj Bahadur of Burdwan by Lord William Bentinck, then Governor-General of India, although the young Maharaja was still a minor at the time of his accession. This "firman" was dated 30th August 1832. Maharaj-Adhiraj Mahtab Chand Bahadur (Mahtab I) was for 47 years one of the most prominent figures in Bengal. He was the first nobleman in Bengal to be honoured with a seat in the Viceregal Legislative Council, of which he was appointed Additional Member in the year 1864. The Maharaja Mahtab Chand increased the dignity of the House. In 1868 he obtained for himself and his descendants Royal License to bear "Arms and Supporters." On the occasion of the proclamation of Her late Majesty Queen Victoria as Empress of India at the Imperial

Assemblage held at Delhi, the right to receive a salute of 13 guns was granted to Maharaja Mahtab. The title and style of "His Highness," as a personal distinction, was also conferred on him on the same occasion. His Highness Maharaja Mahtab made large and valuable additions to the ancestral possessions of the Burdwan Raj. He purchased the Kujang and Sujamutha estates. He was one of the pioneers of the hill station of Darjeeling, and it was his practice to spend the greater part of the year at that station for a long time. He purchased valuable estates in the Darjeeling and Kurseong hills, which yielded a revenue of about Rs. 33,000 per annum. He built extensively at Burdwan, and all the palaces at that centre owe their existence to him, particularly the beautiful Dilkusha Garden, which remains as a monument to his æsthetic taste. Mahtab Chand Bahadur died on the 22nd October 1879. On his death, Maharaj-Adhiraj Aftab Chand Bahadur succeeded to the "Gadi." He was the adopted son of Mahtab Chand. He was born on the 8th August 1860, and was adopted on the 19th March 1866. Two years after his accession, Maharaja Aftab Chand attained his majority, and in 1881 he was installed by Sir Ashley Eden, the then Lieutenant-Governor of Bengal, on the 7th December. He was confirmed in all his honours and possessions by a "Sanad," dated the 12th August 1881, under the seal and signature of His Excellency the Viceroy and Governor-General of India (Lord Ripon). Maharaja Aftab Chand did not inherit the good fortune of his predecessors, with their possessions. Maharaja Tej Chand had occupied the "Gadi" for 60 years, and Mahtab I (Mahtab Chand Bahadur) for 47 years. Mahtab II (Aftab Chand Bahadur) had but a short reign of four years after his installation, but in that time he was active for the public good and spent a great deal of money on objects of utility for the community at large. He raised the Burdwan Raj School to the status of a College, teaching up to the First Examination in Arts standard of the Calcutta University. He conferred upon the town of Burdwan the benefit of a public library in the Burdwan Raj Library which he established. He also made a munificent gift of Rs. 50,000 to the Burdwan Municipality for the establishment of the Burdwan Water Works. Maharaja Aftab Chand died on the 25th March 1885. He left a young widow. His adoptive mother, the Maharani Dowager, and also a widowed daughter of his adoptive father survived him. Maharaja Aftab Chand left a will in which he directed his widow to adopt a son to him as soon as possible after his death. As, however, the widow was a minor, the estate came under the administration of the Court of Wards, who assumed charge and declared the widow to be their ward in accordance with the recorded wishes of the late Maharaja. Events for a time became troubled and litigation arose between the ladies of the family. Mr. I. de Burgh Miller, one of the Joint Managers under the Court of Wards, died in 1886. The widowed Maharani was equally



"DILKUSHA," BURDWAN.

unfortunate in the child chosen for adoption under the late Maharaja's will for this child, the first to be selected, died prematurely. Eventually, however, matters in this connection turned out to be for the best and the present Maharaja Bahadur was chosen for adoption. He is the son of Raja Bun Behari Kapur, C.S.I., who was Joint Manager of the Estate from the death of the late Maharaja in 1879 and Sole Manager from 1891 to 1902. The present Maharaja was formally adopted, and the adoption was ratified by the Government in July 1887. He assumed charge of the estates from the Court of Wards on 19th October 1902, and was installed as Maharaj-Adhiraj Bahadur of Burdwan on the 10th February 1903.

THE MAHARAJ-ADHIRAJ BIJAY CHAND MAHTAB BAHADUR OF BURDWAN.

Maharaj-Adhiraj BIJAY CHAND MAHTAB BAHADUR (MAHTAB III), Maharaj-Adhiraj of Burdwan. The Maharaja is the premier nobleman of Bengal. He was born on the 19th October 1881 and succeeded the late Maharaja Aftab Chand Mahtab Bahadur on 31st July 1887, having been adopted by the late Maharani Benodeni Devi, the widow of the late Maharaja who had received authority to adopt a son by her late husband's will. The Government ratified the adoption in July 1887. When adopted the Maharaja was only six years of age and in consequence had to pass through a long period of minority, his estates being meanwhile administered by the Court of Wards. Lala (now Raja) Bun Behari Kapur, the father of the present Maharaja, who had given his son in adoption to the late Maharani, acted as Manager of the estates under the Court of Wards. He carried out the work with singular ability and conspicuous success. Much attention was paid to the education of the young Maharaja to fit him for the high position he was one day to occupy. In his childhood he was placed under a European governess, and as he grew older his education was entrusted to Babu Ram Narayan Dutta, B.A., who had a great reputation as a scholar and was also distinguished for his high character. Babu Ram Narayan, who was Principal of the Burdwan Raj College, took great pains to discharge his trust, and to bring his pupil's education to a high standard of efficiency. To complete his education by initiating him into the rules of European society, Mr. A. Harrison was appointed to be a companion to the young Maharaja in 1894. The care which was bestowed on his education has been amply justified, and the Maharaja has grown to be a fine specimen of an Indian nobleman, both physically and mentally. He was installed on the "Gadi" by His Honor the Lieutenant-Governor of Bengal on his coming of age in 1903. He has shown great aptitude in the management of his estates since taking charge, and personally attends to all details. This forms no mean trust, as the landed property is situated in 19 different districts comprising an area of about 4,134 square miles, with a population of some 2,000,000 souls. The total collection of the Burdwan Raj exceeds that of any other estate in Bengal. The demands on account of the rents and cesses now amount to a total of nearly 47½ lakhs, to which figure they have risen from the 44¾ lakhs which represented their amount in 1885 when the Court of Wards took charge. The Maharaja is by caste a Kapur Kshattriya. He is the only Kshattriya Prince in India and is the acknowledged head of the entire Kshattriya community throughout India. The public beneficences of the Maharaja are considerable. He supports a College at Burdwan where free education is given to Bengali youths up to the First Arts standard. He also supports a High School at Kalna and a Free Sanskrit Chatoospathi or College and a Girls' School at the same town, at his own cost. He mai tains numerous Thakurbatis or temples at Burdwan and Kalna where the poor are daily fed, and Sadabratas or Alms Houses, where rations of rice and flour are distributed daily to all who apply for them. The 108 temples of Siva at Nawabhat are frequently visited by tourists of all classes. The palaces and gardens of the Maharaja are numerous. Among the most beautiful of these are the Mahtab Manjil with its fine colonnade on three sides, and the Summer Palace known as "Dilkusha," built in the midst of a beautiful garden with an aviary and menagerie attached to it. The Maharaja's Calcutta residence is "Bijay Manjil" at No. 6, Alipur Lane, and his hill residence is "Rose Bank," Darjeeling. The hereditary title of Maharaj-Adhiraj,

held by the Burdwan family since the time of the Mogul Emperors, was recognised and confirmed to the present Maharaja by the Viceroy and Governor-General of India at the Coronation Durbar held at Delhi on 1st January 1903. The title of "Bahadur" was added to it as a personal distinction by the Lieutenant-Governor of Bengal at the Installation Durbar held by him at Burdwan on 10th February 1903. The whole title of Maharaja-Dhiraj Bahadur was conferred as a hereditary distinction on the 26th June 1908 by the Viceroy. The Maharaja relieves his onerous public duties by the study of literature, and is himself a writer of note. He has written a book entitled "Studies" which is a collection of excellent essays on the various topics of the day. He has a special facility for poetry and his song-book styled the "Bijay Gitika" has been very favourably received by the Indian Press and public. The Maharaja has also travelled a great deal, and in April 1906 paid a visit to Europe, accompanied by his Private Secretary, Mr. P. Chatterjee, and his Medical Attendant, Dr. S. B. Mukerjee. On this occasion he travelled over the greater part of the United Kingdom and the Continent, returning to India after an absence of eight months. He has two children, the Maharaj Kumar, born on the 14th July 1905, and the Maharaj Kumari, born on the 16th September 1907.

RAYA YATINDRANATHA CHOUDHURI, M.A., B.L., was born in 1863, of an ancient Zemindar family of Bengal, belonging to the high caste (Kulin) Bangaja Kayasthas of the Guha clan. The family to which Raya Yatindranatha belongs is known as the Munshi House of Bengal, and some of his ancestors were prominent men. His great grandfather, Ramkanta Ray Choudhuri, was the "Munshi" of Warren Hastings, and was highly esteemed by him. Ramkanta's son, Gopinath, gained for the family high respect in Calcutta. Ramkanta's grandsons, Raya Kalinath and Raya Vaikunthanath, were prominent leaders of the Bengal community in the days of Lord William Bentinck. In his fourth year Raya Yatindranatha was adopted, according to Hindu practice, by the widow of Raya Mathuranath Choudhuri, who died in 1863. His early education was much neglected, for the executor under his father's will only acted as such for a short time, and the guardian who was next appointed did not carry out his duties properly. But from early boyhood Yatindranatha was of a naturally studious nature and succeeded so well in his self-imposed search for knowledge that he completed a most brilliant collegiate career at the Calcutta University. In 1885 he took his B.A. degree, following this up by taking his M.A. the following year, and in 1888 he took the degree of B.L. In 1896 he was elected

RAYA YATINDRANATHA CHOUDHURI.

a Fellow of the Calcutta University. During his early years the estate which had been left him was managed by others his elder brother, when he attained majority, holding the management for only a few days. But the cares of management devolved upon him and he had to take over charge of the estate while still reading in the second year class of the Presidency College. His energy under the circumstances was remarkable, as even with these cares upon him, he succeeded so well in his University career. He has been a great patron of literature. His first venture in this line was the establishment of a medical journal called *Chikitsa Sammilani*, the object of which was to effect a reconciliation of the different systems of medical science. It was mainly through his suggestion that the Bangiya Sahitya Parishad succeeded in collecting and publishing valuable ancient manuscripts in Bengali. He was instrumental in securing the compilation and publication of a Life of Maharajah Pratapaditya, and a Social History of Bengal with particular reference to the Jasohar Samaj. In assisting young men to obtain a good education he has been very liberal. Besides sons of near relations whom he has helped in this way he has aided many others by paying their school fees and boarding charges. He awards a Silver medal yearly to the students of the Perojpur School in Backergunge for proficiency in English and Sanskrit. He has not only aided educational establishments at various places, but has founded new ones within his own zemindaris and built a Boarding House for Hindu students attached to the Taki Government School. His own line of study has been comprehensive. On leaving College he read Sanskrit grammar thoroughly, and studied the Vedanta and Nyaya and other schools of Hindu Philosophy with renowned Pundits, acquiring thereby such proficiency in Sanskrit that he is competent to discuss intricate philosophical problems with the ability of a typical Pundit. Raya Yatindranatha has been very forward in the cause of charity and freely aids many poor families with monthly and yearly grants of money. He has made free grants of land to many Kayasthas and Brahmins on which to build houses. He has offered a substantial donation towards the drainage scheme of the Taki Municipality, which is being prepared at his instance. He is a good landlord to his tenants and never backward in showing consideration and giving them help when needed. He has done public service as Secretary to the Bangiya Sahitya Parishad devoted to the Bengali language, and as an active member of the many leading associations in the country, he voices the aspirations of the educated Indians of the present day. He is Secretary of the Provincial Congress Committee of Bengal, Honorary Treasurer of the National Council of Education and Vice-President of the Bangadesiya Kayastha Sabha.

Raja BINAYA KRISHNA DEB is the younger of the two sons of the late Maharaja Kamal Krishna Deb Bahadur, of the family of the Sobhabazar Rajas.

The founder of the family was Maharaja Nub Kissen Bahadur, Political Banyan to the East India Company and Persian Secretary to Lord Clive. Raja Binaya Krishna was born in August 1866. He was educated by private tutors in his father's house. In his teens he took the keenest interest in the Sobhabazar Debating Club, an institution established on his premises, at the instigation of his lamented elder brother, Kumar Neel Krishna, who was its secretary. The club served a particularly useful purpose and brought together many scholarly men. The Raja regularly participated in the debates. At the age of seventeen he founded the Sobhabazar Benevolent Society, of which he has been a munificent supporter. The society has given charitable relief to hundreds of poor students, widows and orphans. His association with these societies gave him an experience that stands him in good stead in his present position. The Raja is one of the most scholarly men among the aristocracy of Bengal, and makes a specialty of history and biography. He is the founder of the *Bangiya Sahitya Parishad* and the *Sahitya Sabha*, societies established for the cultivation and advancement of Bengali literature. His English work, entitled "The Early History and Growth of Calcutta," is the result of careful and laborious research, and has been favourably criticized by the press and many notable individuals.

In recognition of this contribution he was elected on the 27th April, 1907, Vice-President of the Calcutta Historical Society. In the letter informing him of his appointment the Honorary Secretary of that Society writes, "I might be permitted to say that your election is not only popular but distinctly appropriate in view of the fact of your valuable contribution to the History of the Province and your historical lineage."

The Raja is an active worker in social and political life. At one time he was a leading spirit and active supporter of the Indian Association of Calcutta. Of the Indian National Congress he was in his early days a zealous supporter. He acted as its honorary secretary and treasurer for a year, and successfully handled the funds of the institution. He co-operated with Mr. Hume and others in establishing the Bengal National League, and was the president of the Bengal Social Conference held at Calcutta, as well as president of the Bengal Provincial Conference at Bhagulpore. He was the chief supporter of the agitation against the Bill which threatened Local Self-Government in Calcutta. His ambition has ever been to maintain the loyal traditions of his family, and to be

Raja BINAYA KRISHNA DEB.

at once a friend of the people and an interpreter of British rule.

The family of the Sobhabazar Rajas has always held a leading position in Hindu society, and Raja Binaya Krishna who is the worthy representative to-day, occupies a position of high social influence. Apart from customary religious and social festivities, his house has been the scene of many social functions, where Europeans and Indians have been brought into contact, and he has stood forth as the representative of his own society to do honour to a ruler or a distinguished European visitor. As president of the Indian Social Conference, held in Calcutta in 1901, he set forth his views on social questions in a systematic manner. He has been a steady and energetic organizer of a movement to encourage sea-voyages among Hindus, and he has also helped a movement to rectify the Hindu Almanac of Bengal. Socially, he is particularly agreeable, very accessible, and always ready to do a good service. He liberally supported the newspaper *India*, published in London, when Mr. W. C. Bonnerjee, the eminent Calcutta barrister took keen interest in the undertaking, and gave with his whole heart material and moral help to the *Bengalee* and the *Amrita Bazar Patrika*, when those papers were converted from weeklies into dailies. He maintains at his own cost many schools, Madrassahs, charitable dispensaries, and other works of public utility in his zemindaries. The Raja has the courage of his convictions and has not hesitated to face unpopularity, both with Government and his own compatriots. When anti plague inoculation was a novel experiment in the country and alarmingly unpopular, he had his whole family and his adherents inoculated. He has been foremost in helping young men who have travelled to Europe, to be readmitted into Hindu society, and poor authors, and struggling men of merit, have found in him a ready helper.

He lost his father in 1885 and his brother in 1891. Government have freely recognized his position and his services. He was made a Raja in 1895, and received a Kaiser-i-Hind Medal of the second order in 1902. He is now a Government nominated Municipal Commissioner of the city of Calcutta, a member of the District Board of the Twenty-four Perganas, and of the Alipur Reformatory School, a Visitor to the Alipur Central Jail, a member of the Visiting Committee, Campbell Medical Hospital, and a Governor of the Mayo Native Hospital. He is also a visiting member of the Hindu and Hare Schools and is a member of the Committee for framing laws for the Reformatory Schools in Bengal. He is progressive but not revolutionary, either in politics or society; critical but appreciative of the measures of Government. Although a representative of popular opinion, he reserves to

himself independent judgment. The founder of the Raja's family, the famous Maharaja Nub Kissen Bahadur, was the first native of India to realize the true position of the English in India. He was a man gifted with rare foresight and political prescience (*vide* Governor Verelst's views of Bengal and the Memoirs of Nub Kissen). He grasped the position of affairs with statesmanlike ability, and laboured to bring about social fellow-feeling between the English and the Indian. To this end, he frequently entertained the English. One of the most notable entertainments in this connection was held to commemorate the victory of the Battle of Plassey. He was happily connected with the festive season of the Hindus, the Durga Puja, and the family have, for the past one hundred and fifty years, regularly observed the ceremony; the festivities at the house of the Sobhabazar Rajas have become quite an institution. Raja Binaya Krishna, the lineal descendant of the Maharaja, has kept up the tradition of his family, and his parties on the occasion of the Durga Puja are popular and fashionable with the European residents. He is just to his raiyats, and successful in his undertakings. Notwithstanding his essentially English education and his remarkable familiarity with the various phases of Western life and thought, he is an orthodox Hindu, and is universally recognized as the head of the orthodox Hindu community in Bengal.

Raja G. K. DEB.

Raja GOPENDRA KRISHNA DEB was born on the 15th December, 1850, and is the eldest surviving son of the late Maharaja Bahadur Sir Narendra Krishna Deb, K.C.I.E., and great-grandson of Maharaja Bahadur Naba-Krishna Deb, well known as one who played a prominent part in the days of Lord Clive and Warren Hastings. Raja Gopendra was educated at the Hindu School, from which time-honoured institution he matriculated in 1867. He attended the Presidency College and obtained the degrees of Bachelor and Master of Arts from the Calcutta University. When the Government of India decided to frame rules under Parliamentary Statute for appointing, directly, young Indian gentlemen of education and good family to the Covenanted Civil Service, the Raja applied for an appointment in this service, but was induced by Sir Richard Temple, at that time Lieutenant-Governor of Bengal, under the promise of being admitted to the Civil Service later, to accept the post of Deputy Magistrate and Collector of Howrah, in 1876. An appointment to act as Registrar of Assurances and Joint Stock Companies followed next year. His next charge was as Deputy Magistrate and Collector of Berhampur, which he held for one year, and was then placed in charge of the three subdivisions of Culna, Baraset and Sealdah. In November, 1882, Sir Richard Temple's promise was substantiated, and the Raja was admitted to the Statutory Covenanted Civil Service and appointed Assistant Magistrate and Collector. He acted on one occasion as 2nd Inspector of Registration Offices, on another as Magistrate and Collector of Faridpur, and three times as Magistrate and Collector of Pubna. He then held, as his substantive appointment, the post of Inspector-General of Registration, and in the course of promotion in due time was appointed to officiate as Civil and Sessions Judge of Dacca. He was subsequently confirmed in this grade and posted as District and Sessions Judge to Nadia. He next, in succession, held the appointments of District and Sessions Judge of Burdwan and Hughli. In December 1905, he retired from the service, having attained the age limit of 55 years. He did good work during his official career and was twice mentioned by the Judges of the High Court in their annual reports for his civil and criminal work as District and Sessions Judge of Hughli. On the 29th June, 1906, the title of "Raja" was conferred upon him in recognition of his meritorious services, and in honour of his position as head of the historic Sobhabazar Raj family. He is now President of the Bengal Kayastha Sabha, having been unanimously elected by that body for the present year. This Society is one of the most important associations in Bengal, and the office of President has been successively filled by such distinguished leaders of the Kayastha community as the late Maharaja Bahadur Sir Narendra Krishna Deb, the Maharaja of Dinajpur and Sir Chandra Madhub Ghose. The Raja has also been elected one of the Vice-Presidents of the British Indian Association. Raja Gopendra Krishna Deb is now evincing great interest in social matters. Since his retirement he has devoted himself entirely to the service of his countrymen, and

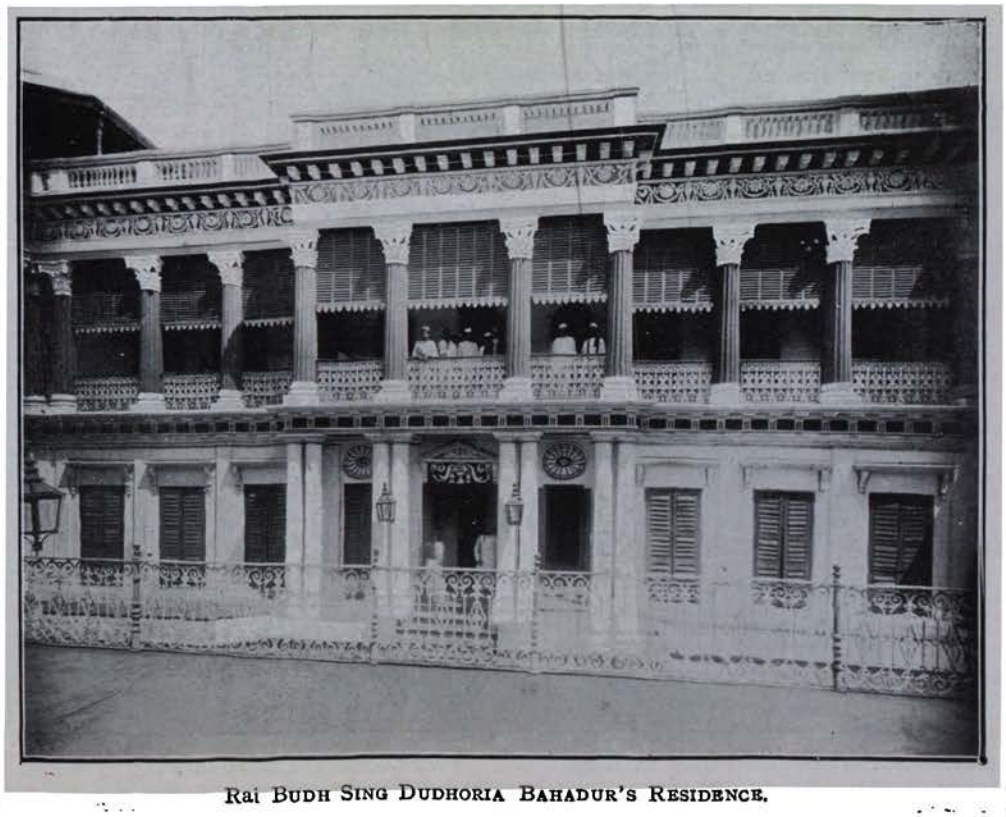
in conjunction with Sir Chandra Madhab Ghose and the Honourable Mr. Justice Sarada Charan Mittra, is endeavouring to effect some much-needed reforms in the social customs of the Kayastha community of Bengal.

The DUDHORIA FAMILY.—The settlement of the Dudhoria family in Bengal dates from 1774, when Harji Mal Dudhoria, with his two sons, Sabai Sing and Mauji Ram, migrated from Rajaldesar, in Bikanir, Rajputana, to Azimgunge, in the Murshedabad District, where they started life in their new home as dealers in indigenous cloth. They were industrious, and successful in their business operations; but the real prosperity of the family began with Babu Harek Chand Dudhoria, a great-grandson of Harji Mal, who not only carried on the business in country-made cloth, which had attained extensive proportions, but opened a money-lending agency, with branches in Calcutta, Serajgunge, Azimgunge, Jangipore, and Mymensingh. Harek Chand died in 1862, a comparatively rich man, leaving two sons, Babus Budh Sing and Bissen Chand, to carry on his business. The Genealogical Table on page 197 will show the descent of the present heads of the family; *viz.*, Rai Budh Sing Dudhoria Bahadur and Babu Bijoy Sing Dudhoria.

At the time of their father's death, the two sons were but boys, having been born in 1847 and 1852 respectively. But they possessed good business talents and energy, and as they grew to manhood, they lost no opportunity of increasing the already flourishing business which they had inherited. Budh Sing was patient and industrious, while Bissen Chand was distinguished for his keen business penetration, firm grasp of detail, and prompt decision. The two brothers lived in harmony together, and were not long in making their mark in the world. They extended their money-lending business in several districts, and opened Banks at Calcutta, Serajgunge, Mymensingh, Jangipore and Azimgunge. The public had unbounded faith in the

Rai Budh Sing Dudhoria Bahadur.

honesty and integrity of the bankers, and their business prospered accordingly. Gradually they began to invest in landed property, and ultimately became Zemindars, owning extensive lands in the districts of Murshedabad, Mymensingh, Birbhum, Nuddea, Faridpore, Purneah, Dinajpore, Rajshaye, Malda, Bhagalpore, and Dumka. The brothers were bent not merely upon amassing wealth, but on putting it to good use when acquired. They helped the poorer members of their community in various ways, fed thousands of the hungry in times of famine by opening Annachatras or poor-houses, clothed the poor, contributed to charitable and other funds, constructed, or caused to be constructed by the ladies of their families, Dharmsalas and temples in several parts of India for the use of their co-religionists, and embarked on various other schemes for the public welfare. As their charities extended, so also did their reputation, and when Sir Ashley Eden, then Lieutenant-Governor of Bengal, visited Jangipore (the venue of his early labours in another capacity), he honoured the brothers by paying them a visit. The Bengal Government, too, showed their appreciation of their



Rai Budh Sing Dudhoria Bahadur's Residence.

liberality and public services by conferring on both the brothers the title of Rai Bahadur, as a personal distinction. They were also appointed Honorary Magistrates of the Lalbagh Bench, in Murshedabad, where they sat for several years.

In 1877, the banking and money-lending concerns having attained vast proportions, the brothers separated, and from that time carried on their respective businesses under distinctive names. Their landed properties, however, remained joint properties, and are to this day, in part, managed jointly. But though divided as to their business interests, the brothers still remained united in all other respects, and prospered exceedingly, each in his own line.

In 1894 Rai Bissen Chand Bahadur, the younger brother, died, after a short illness, and was succeeded by his only son, Bijoy Sing, who was then a promising lad of about fourteen years of age. The charge of the minor, and of his vast estates, was undertaken by Rai Budh Sing Bahadur, who was appointed guardian by the District Judge of Murshedabad. Though the management of the two estates had now devolved upon the elder brother, he ably discharged his onerous duties. He gave Bijoy Sing a sound and liberal education at home, under the tuition of Babu Abinas Chandra Das, M.A., B.L., and when in December 1900, the former attained his majority, he was well fitted in every respect to assume the direct charge of his estates. He is an intelligent young man, of great promise, amiable in disposition, and possessed of strong common sense, and he has inherited the same firm grasp of detail and quick decision for which his father was distinguished. He married the youngest daughter of Rai Dhanpat Sing Dugar Bahadur of Baluchar.

Babu BIJOY SING DUDHORIA.

The members of the Dudhoria family are pious Jains, and have founded Dharmsalas on Mount Abu, on the Parasnath Hill in Hazaribagh, at Rani in Marwar, at Azimgunge and at Bombay. They have also constructed a temple at Giridhi, and another at Jangipore, a Dharmsala at Pawapuri, near Behar, also a charitable dispensary and hospital at Jangipore. They have maintained for a long time past a school for Bengali girls at Azimgunge, and Jain Patsalas for the boys of their co-religionists at Azimgunge, Palitana, and Dhoraji. The total amount of their dona-

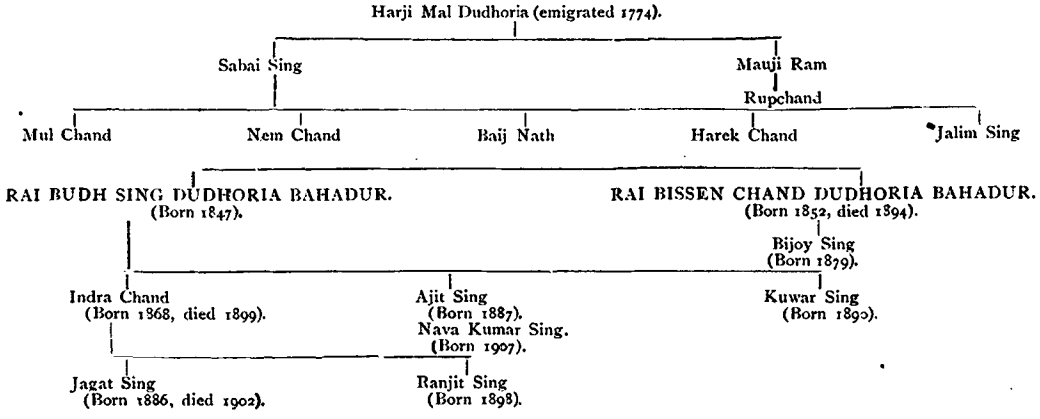
"RIVERSIDE," AZIMGUNGE.
Babu BIJOY SING DUDHORIA'S RESIDENCE.

tions and contributions for public and charitable purposes has reached a very high figure.

The present heads of the family are Rai Budh Sing Dudhoria Bahadur, and his nephew, Bijoy Sing Dudhoria, to whom he acted as guardian during his minority. Rai Budh Sing Bahadur obtained a certificate of Honour on June 20th, 1897, on the occasion of the Diamond Jubilee of Her late Majesty, The Queen-Empress, and another Certificate on the occasion of the Coronation Durbar at Delhi, "in recognition of his liberality and public spirit." He has been twice married. By his first wife he had one son, Babu Indra Chand, born in 1868, who was of an enterprising disposition, for, while studying English under European private tutors, he was led by youthful curiosity and the attractions of the Paris Exhibition to make a journey to Europe, without the knowledge or consent of his people. He was married to a daughter of Rai Setab Chand Bahadur, of Azimgunge, and died in 1899, leaving two sons, Jagat Sing and Ranjit Sing, minors, under the guardianship of their grandfather. Jagat Sing died in 1902, just after passing the Entrance Examination. By his second wife, Rai Budh Sing has two sons, Ajit Sing, born in 1887, and Kuwar Sing, born in 1890. The first of these, Ajit Sing, is married to a daughter of Babu Narpat Sing, Zemindar of Harwat. Rai Budh Sing is a typical gentleman, of the old school of Jains, which is rapidly passing away. He is kind, affable, and generous in his dealings, and is looked upon by the members of his community with veneration and respect.

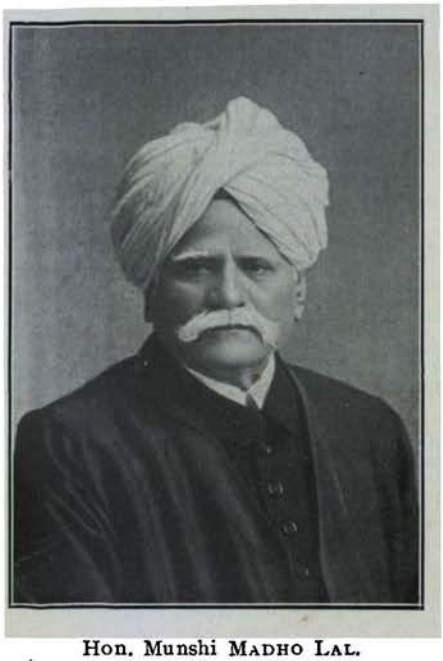
Babu Bijoy Sing, soon after he attained his majority, began to take an interest in public affairs. In 1902 he was nominated by the Government a Commissioner of the Azimgunge Municipality, and at the general election of the Commissioners held in 1906, he was elected Chairman of the Municipality. For a young man of twenty-seven to be placed at the head of the Municipal administration of two important towns, such as Azimgunge and Baluchar, shows the confidence of the rate-payers, and their elected representatives, in his ability and desire to promote the public welfare. Subsequent events have proved that this confidence was not misplaced, for the authorities have been satisfied with his administration, and have placed on record their appreciation of his excellent administrative powers. In 1907, Babu Bijoy Sing was appointed an Honorary Magistrate of the Independent Bench at Lalbagh, in which capacity he has been satisfactorily discharging his duties. He was appointed a member of the General Committee of Lady Minto's Fete, in which he took great interest. He is at present removing a local want, by constructing a suitable building for the Jiagang Edward Coronation Institution, at a cost of Rs. 12,000, for which the local public are deeply grateful to him. He is now on the threshold of a useful career, and has made a very promising beginning.

The family residences of Rai Budh Singh Bahadur and Babu Bijoy Sing are both stately structures, and are richly furnished. The residence of the latter is called "Riverside," from its situation on the bank of the *Bhagirathi*. The collections of jewellery in both families are rare and of great value. The family is counted among the aristocratic families of the district. His Highness the Nawab Bahadur of Murshedabad and his sons, the Princes, have from time to time attended the festivities held in the family mansions at Azimgunge.



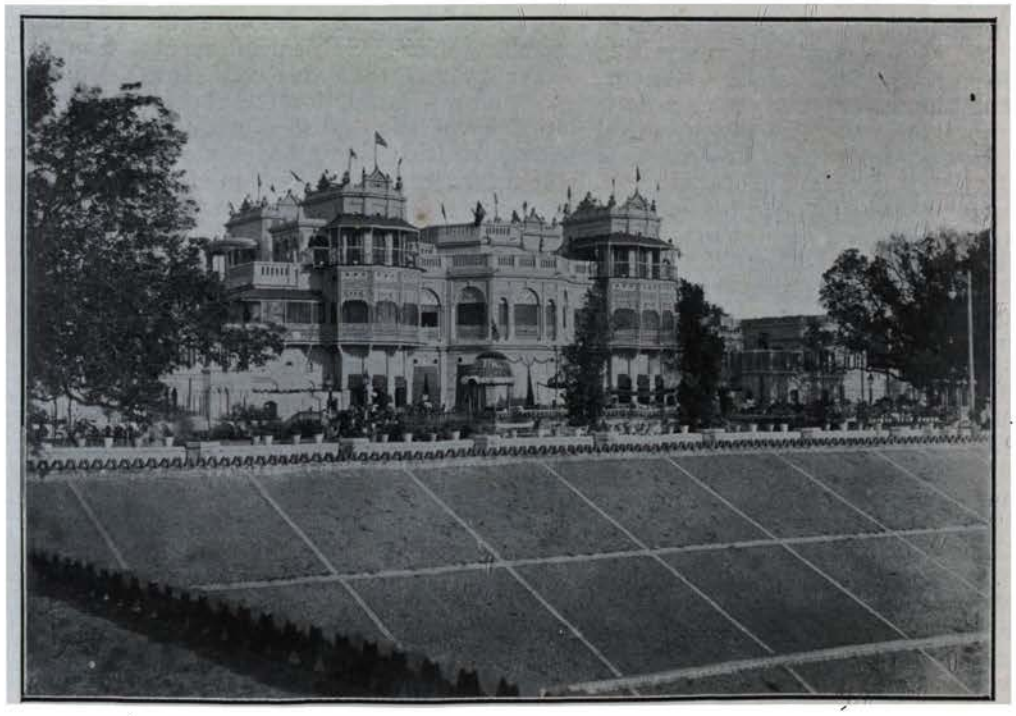
The Honourable MUNSHI MADHO LAL, Benares, was born in 1840, at Benares, of a distinguished family of Sepahi Nagar Brahmins. The history of the Sepahi Nagars from whose stock Munshi Madho Lal sprung is a very interesting one. Originally settled at Ahmedabad in Guzerat, they were always distinguished for their orthodox Hinduism, and through long centuries they upheld the religious and political liberties of their countrymen and co-religionists through all the troubled times produced by the successive Governments which have passed like waves over the country. Early in the eighteenth century some leading men of these Sepahi Nagars left their homes at Ahmedabad and emigrated to the more northern parts of India. Belonging to a very respectable sect of the Panch Dravidas, they were welcomed in their new homes by the other sects of Panch Dravida Brahmins previously settled in these parts. Several Sepahi Nagar families came from the Guzerat side with the famous Raja Bahadurji, himself a Sepahi Nagar, to Delhi about 1729.

It was after this time that Munshi Madho Lal's ancestors came down to Lucknow and other places in Oudh, and took service under the Mussulman Government of the



Hon. Munshi MADHO LAL.

Nawabs, as Amaldars or Tehsildars. Over a hundred years ago Munshi Madho Lal's great-grandfather, Mehta Bhawani Lal, established himself at the sacred Hindu city of Benares. He had three sons, Lala Lakhmi Lal, Lala Govind Lal, and Munshi Girdherlal. Lala Lakhmi Lal entered the legal profession, and became a successful Government pleader at Benares, and his two brothers also served the local Government of that time. The hereditary title was conferred upon them, and by degrees they attained the status of first class Raïs of the North-West Provinces. Being born of a high Brahmin family, Munshi Madho Lal received the sound home education of the learned caste to which he belonged. He was also inducted into a thorough knowledge of Arabic and Persian, which were at that time the Court languages of these Provinces. From home he proceeded to Queen's College, Benares, to prosecute his studies in English, in which he attained the second standard of the senior class. Leaving school, he devoted himself to the study of law, and passed his Munsiffship or Sudder Court Pleadership examination in the year 1860, obtaining first place in the list of successful candidates. For a few years he practised at the Benares bar, and then transferred his practice to the Sudder Court at Agra. As a special act of favour he was offered a second grade Munsiffship by the Government, and he accepted the appointment. In this post he was in his element. His knowledge of law obtained full scope, and the authorities, who fully recognized his abilities and legal acumen and had at various times complimented him upon them, promoted him, till in due course he was appointed a first class Subordinate Judge. Even while a Munsiff he had also acted as the Judge of the Small Cause Court at Allahabad, an appointment which carried great honour in those days. While holding this post he was one of the Commissioners deputed in the well known Saunders-Harsahai case. In this case he differed from his colleagues and for some time came under the displeasure of the authorities; but the Government subsequently recognized the sense of justice that influenced his views. After a long and devoted service lasting over 25 years, Munshi Madho Lal found himself obliged to retire, owing to his younger brother's failing health and the press of work on his own estate. But he did not remain permanently in retirement. The agitation caused by the Tenancy Bill made a strong appeal to his public spirited nature, and he recognized the demand for his services in the cause of the public. He was pressed by the people to put himself forward at this critical period, and he therefore stood as a candidate for the Provincial Legislative Council and was enthusiastically elected a member of that council in 1900. In the two next consecutive elections he was re-elected a member of the Local Provincial Council, and in October 1906 he was elected a member of the Imperial Legislative Council, in which capacity he is still serving. He has done very good work in all these capacities, for the Government as well as for the



BALAPUR RESIDENCE OF MUNSHI MADHO LAL.

people, and a compliment was paid to his character for fairness and just dealing by the honour he received at the Coronation Durbar at Delhi, in his appointment by Government as a Judge for the award of prizes and rewards in the Coronation Art Exhibition. The artistic taste which he brought to bear upon his duties in this connexion attracted the attention of Lord Curzon, then Viceroy, who publicly thanked him for the valuable assistance he rendered to the Government on that occasion. The high integrity of his character has won for Munshi Madho Lal the esteem and admiration of a large circle of European friends, and he has been honoured with the membership of several European clubs. He still retains the membership of the European Club at Benares. Munshi Madho Lal has evinced a strongly benevolent disposition. During the times of famine, he took up the cause of the distressed people. He assisted them in many ways, opening relief works in his villages, in the different districts of the provinces. For this service he received the thanks of Government. In memory of his younger brother, Munshi Sadho Lal, he built a separate ward in the Prince of Wales' Hospital, Benares. He placed a sum of Rs. 45,000 at the disposal of the Benares Government Sanskrit College for the purpose of establishing the Sadho Lal scholarship, for students who wish to pursue their studies in Sanskrit. In private life Munshi Madho Lal has won the respect of all by the nobility and purity of his character. His Brahmin ancestry and education have made him an admirer of the Vedas, a lover of Brahmins and of the pure Brahminic life. He has performed three great "Yajnas," considered the sacred duty of a true and devoted Brahmin. In Benares he frequently holds meetings of the great Pandits, and takes keen interest in discussing great social and religious problems.

In aid of the Benares Sanskrit Library he subscribed a sum of Rs. 25,000. His devotion to the public affairs of his country has brought him prominently forward on many occasions. In 1905, when it was decided to hold the Indian National Congress at Benares, the apathy of the people would have wrecked the project, but that Munshi Madho Lal threw himself into the cause, and by his personal qualities of perseverance, firmness, self-control and judgment, as well as by his ample resources in men and money, brought the session to a successful issue. The friendly relations which existed between the members of the Local Government and himself contributed largely to this result. As Chairman of the Reception Committee, Munshi Madho Lal performed a most difficult task in controlling a most turbulent committee, which task he carried through with success. No visionary dreamer, Munshi Madho Lal's conduct of affairs was characterized throughout with moderation. His speech delivered as Chairman of the Reception Committee is described in the Report of the Congress as a "plain, straightforward utterance of a practical man, well experienced in the politics of this country." At this Congress it was due to his strong action that the proceedings were not marred by a minority of mal contents, including Lajput Rai and Bal Gangadhur Tilak, who strongly opposed the resolution adopting an address welcoming the Prince and Princess of Wales to India. As President of the Reception Committee he crushed the unseemly opposition, declaring that he would order the dissentients out of the hall. Addressing the meeting, he pointed out the different treatment such a movement would receive in the Native Indian States and in Russia. The resolution, as a result of the spirited action of Munshi Madho Lal, was carried by acclamation. This meeting of the Congress was distinguished by the most important of recent Indian movements. It was here that Swadeshism was born. In this year (1905) was held for the first time the Industrial

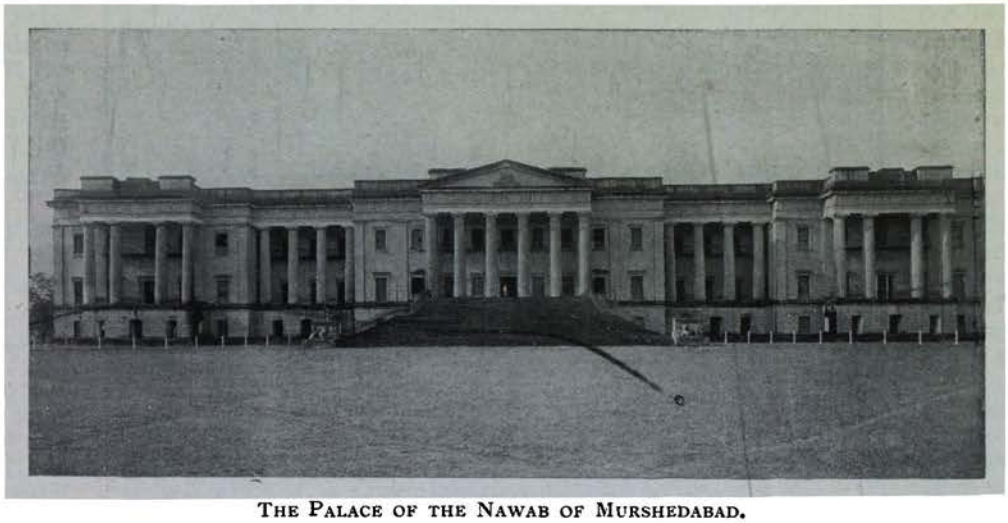
BALAPUR GARDEN PARTY IN HONOUR OF SIR JAMES AND LADY DIGGES LA TOUCHE, 15th February 1904.

Conference which has been declared by many sound thinkers, both European and Indian, to be the most important achievement that the Congress has brought into existence. It was absolutely a non-political movement, and in it, all those who have the welfare of the country at heart, irrespective of political bias and other differences, could meet. The report of the Conference makes it clear that the moving spirit in this benign departure was Munshi Madho Lal, Chairman of the Reception Committee. But for his co-operation, the report states that the Conference could not have been held at all. He smoothed over the differences that arose and laboured hard for its success. The President, Mr. R. C. Dutt, in his concluding speech, alluded to the Munshi as "the life and soul of the movement." In connection with the Congress and Industrial Conference was held for the first time an Indian Industrial Exhibition, with the largest and most varied collection of indigenous goods ever brought together in this country. This practical demonstration of the feasibility of Swadeshism went far to establish the movement. In this, also, Munshi Madho Lal was the most prominent promoter. For his services, and his generous support and encouragement of Sanskrit study, Munshi Madho Lal received an unprecedented honour at the hands of his co-religionists at Benares. In addition to a highly eulogistic address from the most prominent of Hindu Pandits he was presented by that distinguished and representative Sanskrit scholar, Mahamahopadhya Gangadhur Shastri, C.I.E., with copies of the four Vedas and some rare Sanskrit manuscripts. The ceremony at which the presentation was made was an imposing and significant ritual—a symbolic demonstration of the fact that, in recognition of his meritorious services in the promotion of their ancient learning and literature, the Pandits had bestowed on the Munshi the high dignity of custodian of their sacred books—an honour hitherto reserved almost exclusively for princes of the blood royal. Munshi Madho Lal shows his descent from the soldierly branch of the Nagar Brahmans, known as the Sepahi Nagars, by his bearing as well as his character. He has the bluff direct manner of the born soldier and he wastes few arguments on the perverse. He does not wait to unravel Gordian knots; he cuts them. These characteristics have stood him in good stead in directing the various public movements at Benares.

The Late Nawab Sir SYAD HASSAN ALI, KHAN BAHADUR, G.C.I.E.

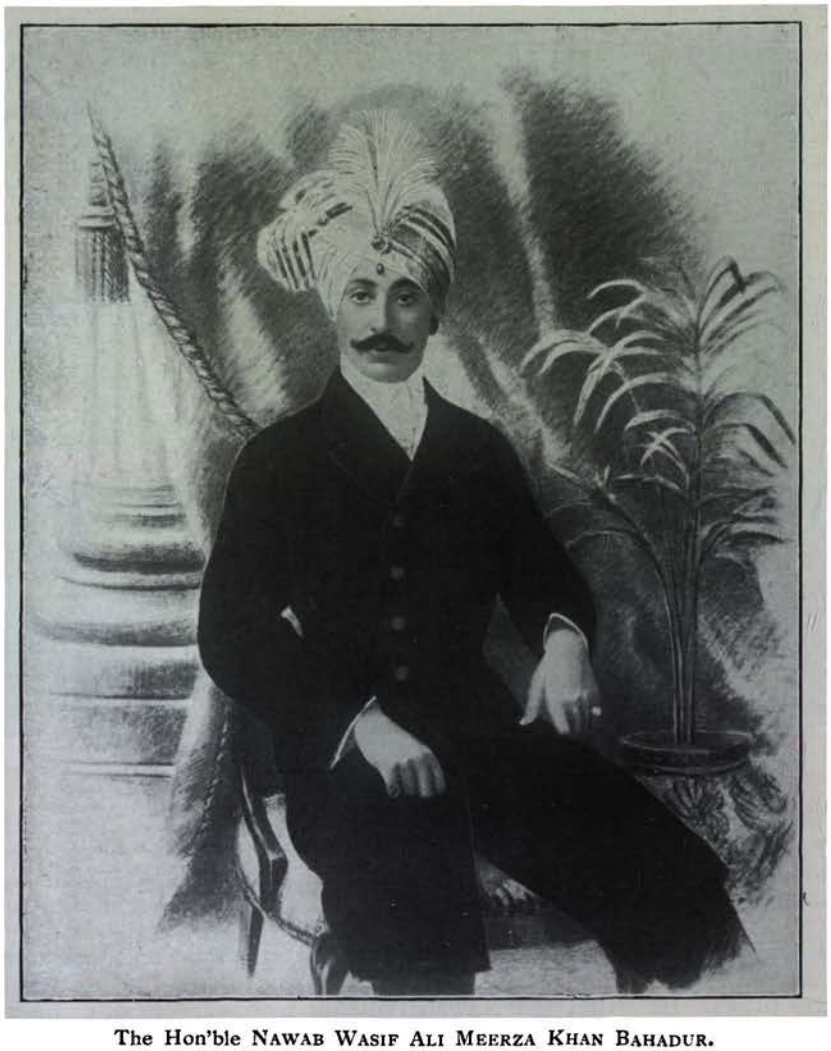
Nawab Sir SYAD HASSAN ALI, Khan Bahadur, G.C.I.E., late Nawab of Murshedabad. The princely house of Murshedabad has been, since the early days of the English in Bengal, in close alliance with the British Power. The co-operation of Meer Jafar, in the mid-eighteenth century, cleared Clive's way to victory, and rendered easier the subjection of the great province of Bengal to the sway of the Honourable East India Company. The convention with the Prince, who then held the title of Nawab Nazim of Bengal, facilitated the substitution of the British for the Mahomedan power in this province. The family of the Princes of Murshedabad claims descent from the most remote antiquity—even from Abraham—in unbroken line, extending over more than 4,000 years. The immediate ancestors of the present house of Murshedabad came into India with the irruption of the Mogul conquerors of the country. Their line was of the purest Arabian blood, and the members of the line had had a distinguished history among the followers of the Prophet during the Arabian domination of Western Asia, prior to the conquest of India. The house traces its descent from Abraham, through the distinguished strain of Mahomed the Prophet. The present Nawab, Wasif Ali

Meerza, Khan Bahadur, is the eldest son of the late Nawab Sir Syad Hassan Ali Khan Bahadur of Murshedabad the eldest son of the late Muntazim-ul-Mulk, Mohsin-ud-Daula, Faridun Jah, Nawab Syad Mansur Ali Khan Bahadur, the last of the house to bear the title of Nawab Nazim, Subadar of Bengal, Behar and Orissa. The present Nawab is thus eighth in descent from Meer Jafar, Nawab Nazim of Bengal, twenty-sixth from Imaum Hoossein, thirty-seventh from Ali, and thirty-eighth from the Prophet Mahomed. It was not till the year 1880, that the last Nawab Nazim, Syad Munsur Ali Khan, resigned his position and titles, in which act he was subsequently confirmed by his son and heir, Sir Syad Hassan Ali Khan, by means of a legal document executed in convention with the Government of India, receiving in return a fixed hereditary position, with a settled income, landed estates, the rank and dignity of Premier Noble in Bengal, and the hereditary title of Amir-ul-Umra; privileges which have descended to and are held by the present Nawab Asif Ali Meerza, Khan Bahadur. The present Nawab's father, Nawab Sir Syad Hassan Ali, Khan Bahadur, was born in the year 1846, and educated under private tutors. He was sent to England in the care of Colonel Herbert in the year 1863, to complete his education. He remained in Europe for some years and had the honour of a presentation to the late Queen Victoria, by the Secretary of State. Previous to the year 1880, he returned to India, when his father, the last Nawab Nazim of Bengal, executed the act of resignation which for ever abolished that title. At this time his father retired, and on the 27th March, 1883, Syad Hassan Ali Khan succeeded to the Musnud, the title of Nawab Bahadur having been conferred on him by "Sanad" earlier, *i.e.*, on the 17th February, 1882. Honours were showered upon him. He was created a Knight Commander of the Order of the Indian Empire on the 16th February, 1887, under a Royal Warrant bearing the sign manual of the late Queen Victoria. The titles of Ihtesham-ul-Mulk, Rais-ud-Daula, Amir-ul-Umra, and Mahabut Jang, were conferred upon him on the 20th May, 1887, and on the 20th May, 1890, he was made a Knight Grand Commander of the Order of the Indian Empire. On the 12th March in the year 1891, Nawab Sir Syad Hassan Ali Khan entered into an agreement with the Secretary of State whereby he confirmed his father's renunciation, for ever, of the titles of Nawab Nazim and Subadar of Bengal, made in 1880. This agreement was subsequently incorporated in Act XV of 1891. It was at this time that the Nawab Bahadur received, as a *quid pro quo*, a fixed hereditary position, with a settled income, certain landed estates in several districts of Bengal, and the rank, precedence, privileges, and dignity of Premier Noble of the three provinces of Bengal, Behar, and Orissa, with the hereditary title of Amir-ul-Umra, all descendable to his male lineal heirs according to the right of primogeniture, besides the income of the Nizamut State lands. The late Nawab was distinguished by the great diligence with which he worked to effect the vast improvements which he made in all branches of the Nizamut. Unfortunately, in 1890, he was stricken with paralysis, a calamity, however, which did not prevent him from showing the greatest administrative activity in the succeeding years, during which his physical incapacity was not allowed to interfere with his mental energies. In 1902 he was honoured by a visit from Lord Curzon, the then Viceroy of India. He well maintained, and improved, the dignity of his exalted position and administered his estates in admirable fashion. He was of a liberal disposition, and his charities were extensive and not limited by considerations of religion or nationality. He was influenced by the truest public spirit. When Lord Curzon formulated his scheme for the founding of the Victoria Memorial Hall at Calcutta, the Nawab Sir Syad Hassan Ali Khan voluntarily came forward with the offer of many of the beautiful and unique objects of historical interest in his possession, which it had been his particular care to collect and preserve. In the year 1895, the pressure of years and loss of health induced him to initiate his eldest son into the administration of the affairs of the Nizamut, and to invest him with full authority; but he lived for many years after this, devoting his life to many estimable objects. He experienced another misfortune in 1897, when the severe earthquake in Bengal wrecked the great palace of Murshedabad, which was built in 1837, at a cost of sixteen lakhs of rupees. On this occasion the late Nawab had a narrow



THE PALACE OF THE NAWAB OF MURSHEDABAD.

escape, for a portion of the building, immediately behind where he was sitting, collapsed completely, and he was extricated from the ruins with difficulty. The palace was repaired at considerable expense. It is one of the largest buildings in Bengal and contains many pictures of great interest and value; among them a portrait of William IV, presented by the King himself to the Nawab Nazim of that day. The Nawab lived on till the year 1906, when an attack of pneumonia and fever proved fatal on the morning of Christmas Day, and he passed away quietly at the age of 60, after a life of great usefulness and dignity. His extensive charities, broad sympathies, readiness to help the poor and to succour the distressed, his liberal hospitality and devotion to the public good, and his loyalty to Government, were features in a career which won him the admiration and respect of all. His funeral was the most imposing ceremony ever held in Murshedabad, and the procession of mourners, which was the largest ever seen, included Mahomedans, Christians, Hindus and Jains of all grades, to whom his large-minded liberality had endeared him. His embalmed body was deposited temporarily in the family burial ground at Jafarganj, for subsequent removal to Kerbela in Arabia.



The Hon'ble NAWAB WASIF ALI MEERZA KHAN BAHADUR.

The Honourable Nawab WASIF ALI MEERZA Khan Bahadur, of Murshedabad, eldest son of the late Nawab Sir Syad Hassan Ali Khan Bahadur, G.C.I.E., of Murshedabad, was born on the 7th January 1875. At the early age of 12 he was sent to England for his education, in charge of Mr. Coles, Principal of the Doveton College. He was educated at Sherbourne, Rugby, and Trinity College, Oxford, and on the completion of his College course he made a tour, in the course of which he visited the chief places of importance in England. He also travelled extensively on the Continent of Europe, and did not return to India till 1895. On his return his father, the late Nawab, initiated him into the administration of the affairs of the Nizamut and invested him with full powers. He shortly afterwards entered public life, showing interest in the affairs of internal administration. He was appointed Chairman of the Murshedabad Municipality in 1899, and in 1901 he received the greater honour of appointment as a member of the Bengal Legislative Council. In the same year he was selected by the Viceroy of India as one of the notables to represent Bengal at the Coronation ceremonies of the King-Emperor in London. On his return to India after the Coronation, he attended the Delhi Coronation Durbar held on 1st January 1903 as a guest of the Government of Bengal. He was renominated as a member of the Bengal Legislative Council in 1905, and again in 1907. On the death of his father, the late Sir Syad Hassan Ali Khan Bahadur in 1906, he succeeded to the "Musnud" of Murshedabad, and the hereditary titles of Nawab Bahadur of Murshedabad and Amir-ul-Umra. He inherited the whole of the Nizamut State properties and the income settled under the agreement of 1891, and succeeded to the rank and dignity of Premier Noble of the three provinces of Bengal, Behar and Orissa, under the style and title of Ihtesham-ul-Mulk, Rais-ud-Daula, Ameer-ul-Omra, Nawab Asef Kudr Syad Wasif Ali Meerza Khan Bahadur, Mahabut Jung, Nawab Bahadur of Murshedabad. The present Nawab Bahadur is a worthy descendant of the illustrious and ancient house of which he is the present representative. He has distinguished himself by loyalty to the Government of the Sovereign, the traditional attitude of the Princes of Murshedabad, as well as by his public spirit and private philanthrophy, charity, and generosity. He is liberal and open minded, an admirable admin-

istrator of the vast estates of his principality, and an earnest man of public affairs, in which he has shown a broad and liberal disposition. He is now in the prime of life, with, in the ordinary course, many years of usefulness before him. During the recent period of unrest in Bengal, he issued a Proclamation, dated 17th May 1907, and used his influence on the side of order and good feeling; and his efforts to preserve cordial relations between the Mahomedans and Hindus were crowned with the success they deserved. His eldest son and heir, Murshedzada Wares Ali Meerza, was born on the 14th November, 1901.

Kumar MANMATHA NATH MITRA, Rai Bahadur, a prominent zemindar of Bengal, grandson of Raja Digambar and son of Grish Chandra Mitra. The Kumar had the misfortune to lose his father by an accident when he was still an infant, and his grandfather died shortly afterwards. The young Kumar, with his brother, was brought up by Babu Mahendranath Bose, an ex-Sub-Judge, and cousin of the late Raja. Mahendranath Babu faithfully discharged the duties of his executorship, and under his management the family estates prospered and increased in value during the minority of the Kumars. Kumar Manmatha Nath was educated at the Hindu School, and his education was of a practical business nature, calculated to fit him for the management of the large estates which would come to him on attainment of his majority. A modern landholder, in order to hold his own, has to be acquainted with many things not necessary for gentlemen in ordinary life, and, accordingly, the Kumar set himself to acquire a knowledge of law, and placed himself for a time under the tuition of a lawyer. He also acquired a good knowledge of practical surveying and engineering, and in order that his familiarity with the English language might be extended, a European tutor attended to his education at home, out of school hours. He consequently attained proficiency in the acquirements necessary for his position and responsibilities, and in every department of his zemindary work he has proved the thoroughness of his early education.

Kumar Manmatha Nath, on attaining his majority, early took a part in public questions. As a Hindu he found himself bound to join the agitation in protest against the Age of Consent Act, in conjunction with Raja Binaya Krishna of Sova Bazar and the late Maharaj Kumar Neelkrishna. Since then he has taken part in nearly every public movement. His views are very catholic and he does not confine himself to questions which affect only his own class of landholders.

Though of aristocratic birth, the Kumar mixes freely with the middle classes of Bengal, on terms of equality, and shares and aids their aspirations. He is a member

Kumar M. N. MITRA.

of the Indian Association, as well as of the Bengal Landholders' Association, and is in the camp of the people as well as in that of his brother zemindars. He also devotes much time and energy to social movements and is connected with many public bodies. Prominent among these is the Kayastha Sava, a social body which has for its object the religious, moral and social advancement of the several branches of the Kayastha community in Bengal. For this Society the Kumar has done good service and, as one of its Honorary Secretaries, has worked hard for its welfare. Kumar Manmatha Nath has likewise interested himself in the cause of Art, and the Indian Sangit Samaj, an institution established for the cultivation of music and the encouragement of musical and dramatic talent, owes not a little to his efforts. The Sangit Samaj also helps in the work of drawing different classes together and bringing the aristocracy of Bengal into touch with the great middle class of Bengal society, and in this direction the Kumar has also afforded material aid to the Society. The result has been the introduction of a social system somewhat akin to that to be found in Clubs, a system that was unknown to its Bengali members previous to the inauguration of the Society. The Samaj has staged many well-known Bengali dramas, and its members performed "Reza" on its stage in aid of the famine-stricken people of Eastern Bengal, and were able to remit the sum of Rs. 1,546 to the distressed people as a result. To the Sangit Samaj was also due the great demonstration held on the Calcutta maidan on the occasion of the death of the late Queen-Empress of India in 1902, and the Kumar was one of its most prominent organisers.

Kumar Manmatha Nath has also rendered some service to the Government, and on one occasion he was invited by the Hon'ble Mr. Hare, C.I.E., then Member of the Board of Revenue, to express his opinions on certain questions in connection with the proposal made for the establishment of an institution for the education of the sons of Bengal Zemindars. This proposal originated with Raja Sashi Shekareshwar, Rai Bahadur, of Tahirpur, and the Kumar supported the proposal in a lengthy and able letter, pointing out the advantages which would accrue from the movement, and embodying much valuable advice on the details of the scheme.

The Kumar has also devoted much time and money to charitable objects. He made a splendid gift to the Hindu Orphanage, of which he is one of the Vice-Presidents, and he has also afforded substantial help to the Calcutta Deaf and Dumb School, and many other charitable and philanthropic institutions of Bengal. Being a patriotic Bengali, he has in recent years devoted much time to the agitation against the partition of Ben-

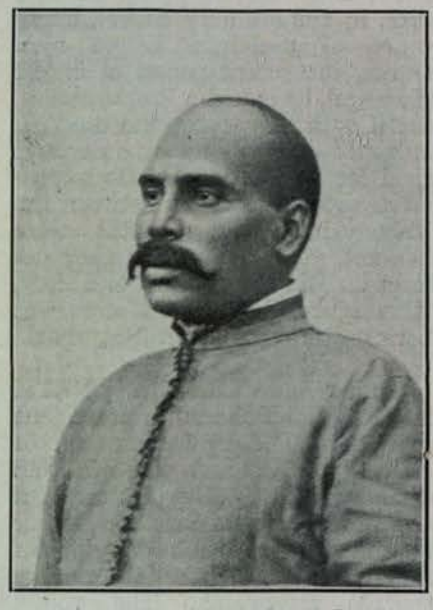
gal, and has identified himself with the *Swadeshi* cause, in which he has worked with the practical object of improving Bengali manufacturing industries. He has not, however, allowed his sympathy with the people to waste itself in purely political agitation, but has been active in the endeavour to ameliorate the conditions under which the poorer classes exist. He was particularly forward in organizing relief for the population of Bengal during the recent famine of 1906, and placed himself at the head of the movement inaugurated in Calcutta to raise subscriptions in aid of the Eastern Bengal Famine Relief Fund, of which he was appointed Treasurer. The Kumar in former years took great interest in Calcutta municipal affairs and was twice returned as Commissioner for Ward No. 4. He, however, was one of the "twenty-eight" who resigned as a protest against the speech of the late Sir Alexander Mackenzie, formerly Lieutenant-Governor of Bengal. In recognition of his public services, the Government of India bestowed on him the title of "Rai Bahadur" in 1897.

Kumar NARENDRA NATH MITRA, brother of Kumar Man-

Kumar N. N. Mitra.

matha Nath Mitra, Rai Bahadur, received his education at the Hindu School, and he also had the advantage of a private European tutor with whom he carried out his home studies. He acquired the many accomplishments necessary to a gentleman of his position and became a sound practical man of affairs. In 1892 he attained his majority and joined his brother, Kumar Manmatha Nath, in the management of the ancestral estate. Kumar Narendra Nath is possessed of an excellent disposition which has endeared him to rich and poor alike. His charities have been far-reaching, and have been bestowed on worthy objects. An ardent believer in education, the pleasure of his life is to assist earnest but needy students to obtain knowledge. In the path of learning he has helped, and is still helping, very many of his youthful countrymen; and he has borne the expenses of several who have desired to complete their studies in England. Some years ago, he took an active part in the movement set on foot by Mrs. Besant for establishing a Hindu College at Calcutta. In common with his brother, Kumar Manmatha Nath, Kumar Narendra Nath cherishes a pious feeling for the memory of his grandfather, and endeavours to follow in his footsteps in the matter of the charities set on foot by their ancestor. Certain properties have been set apart by the brothers for the maintenance of these institutions. In memory of their father, the brothers have established a charitable dispensary known as the Grish Chandra Mitra's Charitable Aushadhalaya. More than a hundred patients are here treated every morning under the superintendence of a salaried Kaviraj. This is the first Ayurvedic Dispensary of its kind. A quarterly meeting of the most noted Kavirajes in Calcutta directs the affairs of the Dispensary. The brothers have also largely helped to establish the Jhamapukar Library, and the Konnagar School has been assisted by them with four scholarships.

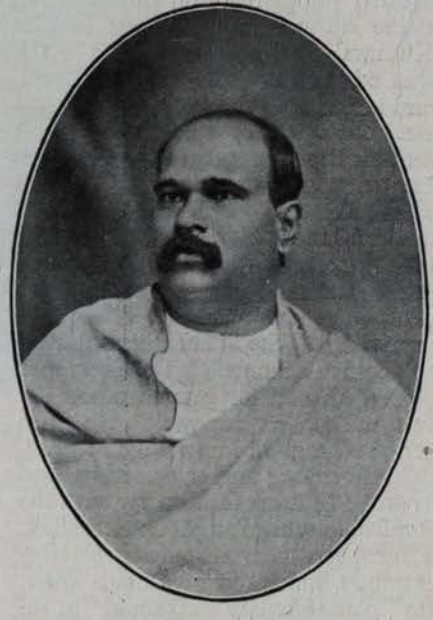
Rai BEPIN BEHARY MITTRA, Rai PROMOTHA NATH MITTRA, and Rai CHUNDRA NATH MITTRA are lineal descendants of the Mittra family of Baraset, an old and respected Kayastha family in Bengal. The origin of the famliy can be traced as far back as the reign of Raja Adisur in Bengal. Khetriya Kayasthas, Makaranda Ghosh, Dasarath Bose, Kali Das Mittra were conspicuous members,



Rai Bepin Behary Mittra.

and they founded the several Kulin Kayastha families of Bengal.

The real founder of the present family was Dewan Ram Sunder Mittra, who took service under the



Rai Promotha Nath Mittra.

Honourable East India Company in the Commissariat Department at Barrackpore during the adminis-

tration of Warren Hastings. There he distinguished himself by his fidelity to Government.

In 1795 he purchased the large estate of Rajah Durbijoy Singh of

Rai CHUNDRA NATH MITTRA.

Powi, in the District of Gaya, and at a later period acquired other properties in the Districts of Gaya, Shahabad, Azimabad and Lohardaga.

He obtained the title of "Rai" from Nazir-ul-Mulk, Nawab Nazim of Bengal, in recognition of distinguished services. The title was a hereditary one attached to the estate, and the *Sanad*, to which a Punja, or finger seal, of the Nawab was affixed, was long preserved by his sons Nilmoni Mittra and Pran Kissen Mittra.

After the death of Rai Ram Sunder Mittra his two sons Rai Nilmoni Mittra and Rai Pran Kissen Mittra, inherited his large estate and followed the example of their father in maintaining charitable institutions.

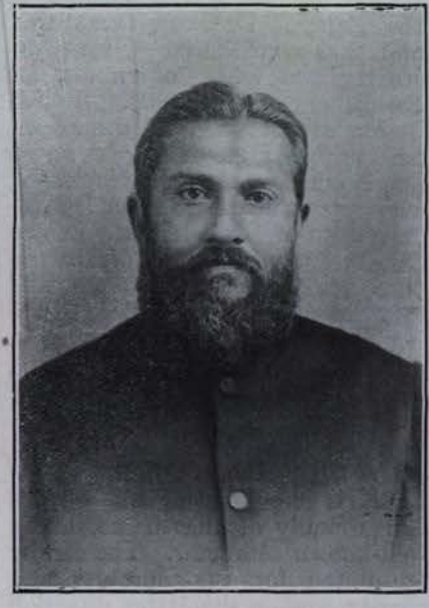
The present administrators are cousins and sons, respectively, of Rai Sham Lal Mittra and Rai Mohun Lal Mittra. They are useful members of the community and participate actively in public affairs.

The late Babu HARI HAR MOOKERJEE was born in 1834, and was a member of the well-known Mookerjee family of Uttarpara. He had the misfortune to lose his parents while still a child, and was brought up by his grandfather, Babu Jago Mohan Mookerjee, who was famous for his charities. The immediate charge of young Hari Har was taken by his uncle, Babu Joy Kissen Mookerjee. This gentleman put his nephew under the tutorial care of the late Captain D. L. Richardson, of the Calcutta Hindu College. Babu Hari Har did little to distinguish himself as a scholar, but showed a sterling disposition. At the age of fourteen, his studies were discontinued, and he was placed in charge, by his uncle, of his father's portion of the large family estate. He did well in the management and

The late Babu HARI HAR MOOKERJEE.

succeeded in improving the property. Babu Hari Har was the foremost among the zemindars of the Hooghly District, who, in conjunction with the Government officials, brought about the accomplishment of the Rajapur drainage scheme, a work which does equal credit to the zemindars and the Government. As one of the great zemindars of Bengal, Babu Hari Har had the privilege of keeping fifteen armed retainers about his person. He was for years an honorary magistrate of the Serampore Sub-division and an active member of the Rajapur Drainage Committee, on which he served with zeal and discretion. He was also a Commissioner of the Uttarpara Municipality. Babu Hari Har was a good landlord, and his relations with his tenants were never strained. His tact and gentleness of disposition, Combined with unfailing kindness, were effectual in preserving a good feeling with his tenantry. He attained a reputation as a man of serene temper and cool judgment. He had a leaning towards the arts and sciences, which showed itself in the establishment and furnishing of his palatial residence, the laying out of its grounds and gardens, and in the interest he took in medical science and its professors. He was of a religious bent, and had great plans for the permanent investment of certain sums of money for the observance of religious rites, which, however, he did not live to see carried out. He passed away in the sixtieth year of his age. It is stated that the events of his life showed a remarkable correspondence with the predictions of the astronomers, made at his birth, and cast in the form of a horoscope.

Babu JYOT KUMAR MOOKERJEE, Zemindar of Uttarpara, near Serampore, in the District of



Babu JYOT KUMAR MOOKERJEE.

Hooghly, Bengal, is the son of the late Babu Hari Har Mookerjee, and a member of a distinguished family

of Kulin Brahmans. Babu Jyot Kumar has mixed much in public life, and has devoted himself mainly to social pursuits and the management of his zemindaries, in which he has attained a reputation for mildness and benevolence. Mr. F. W. Duke, I.C.S., late Collector of Howrah, at present Commissioner of the Orissa Division, was pleased to regard him as "one of the greatest zemindars of the district, and also as one of the most exemplary." He is widely known and greatly respected among the gentry of Bengal, and he upholds the social prestige which his family have gained, by frequent entertainments on a sumptuous scale, to which his large circle of friends are invited. He is well known to the officials, and has filled with credit the honorary appointments of Member of the District Board of Hooghly, Honorary Member and Municipal Commissioner. He follows in the footsteps of his father in the encouragement he holds out to doctors and kavirajes. He was a member of the Uttarpara Dispensary, and his benevolent disposition is shown by the large donations he has made to the Victoria Memorial Fund, the District Charitable Fund and the Famine Fund of Calcutta. He has been an active member of the Rajapur Drainage Committee, and has contributed a sum exceeding two lakhs of rupees, for the benefit of his ryots. He is a patron of art and an excellent amateur photographer. He has a son, Babu Sanat Kumar Mookerjee, who is married to the granddaughter of Raja Ram Ranjan Chuckerbutty Bahadur, of Hetampore. He has other issue, daughters, who are all well-married in Kulin families. Babu Jyot Kumar is of the old school of Bengalis and his personal habits are marked by their simplicity.

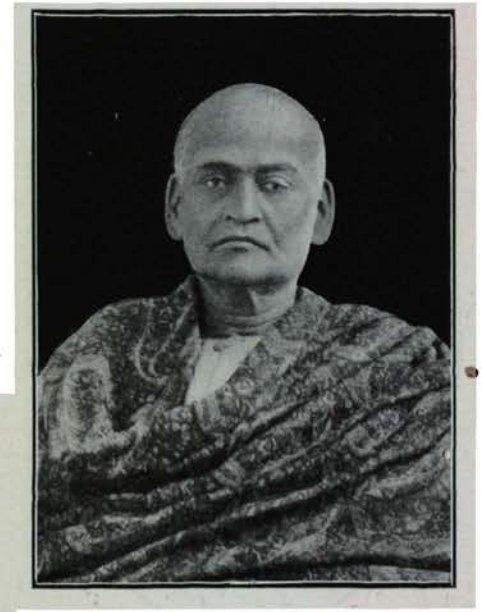
Mr. CHARU CHANDRA MULLICK is the head of the Puttaldanga family of that name, and a well-known zemindar. The family are noted for their probity and charity, and in the latter direction they have contributed very large sums of money, and have a fund for the education of boys. They also subscribe liberally to the Hindu Widow Fund.

Charu Chandra is descended from Purander Bose Mullick, better known as Purander Khan, the founder of Kulinism among the Kayasthas of Bengal. He is an Honorary Presidency Magistrate of both Calcutta and Sealdah, and served as a Municipal Commissioner for nine years; during which period he was thrice elected. He is a member of several associations and was for some time Vice-President of the British India Association. He played a conspicuous part in the great maidan demonstration on the occasion of the death of the late Queen-Empress. As a Freemason he holds high rank. He is also a

Mr. C. C. MULLICK.

prominent member of the Indian Sangit Samaj Association. Although a Theosophist, he is a Hindu in the literal sense, and observes all Hindu rites.

The Late Babu COONJO BEHARY MULLICK. Few aristocratic families in Calcutta can claim greater antiquity and respectability than that of the illustrious Beer Nursing Mullick, *alias* Beeru Mullick, from whom the late Babu Coonjo Behary Mullick claimed descent. He was a land-holder of great repute and culture, and belonged to the old school of thinkers. He received his education at the Oriental Seminary, and made good use of his advantages and wealth in aiding all deserving charities of his time. His palatial residence in Durmahatta Street was the refuge



Late Babu COONJO BEHARY MULLICK.

of all the needy and poor, and the maxim which always guided him in distributing his charity was "Let not the left hand know what the right hand doeth." His private life was praiseworthy and his devotion to his mother was a notable feature of his domestic life. He never sought for recognition, either from the State or the public, for the many charitable works with which he was identified. He died on the 4th October, 1899.

Dewan KRISHNA KANTA NANDY, popularly known as Kanta Babu, was the founder of the Cossimbazar Raj family. His great-grandfather emigrated from the village of Sijna in Burdwan in quest of fortune and settled at Sripore in the immediate vicinity of Cossimbazar, where the East India Company then had a silk factory. Cossimbazar which is now but a mouldering heap of ruins, hallowed by the memory of its former opulence, was once full of life, the activity of commerce. The place rose into importance as an inland port by the development of its silk trade.

The great-grandfather of Krishna Kanta came to seek his fortune

at Cossimbazar in the days of its opulence, and by dint of energy and perseverance established himself as a successful merchant.

Kanta Babu foresaw the rise of the British power in Bengal, and associated himself with it to financial advantage. His ability attracted the notice of Warren Hastings and he entered the East India Company's service as writer.

He subsequently rendered signal service to his patron and became his banian. When the latter returned from England in 1772, Kanta Babu was appointed his confidential secretary and acted in that capacity throughout the whole of his stay in India.

Kanta Babu married several times and it was by his last wife Kshudumoni that he had one issue. After Mr. Hastings' retirement in 1785 Kanta Babu returned to Cossimbazar. He died soon after the great Governor-General's retirement.

Maharaja Lokenath Bahadur, the only son of Dewan Krishna Kanta, gave promise of a brilliant career. He was the subject, however, of a hopeless malady and died in 1804, leaving an infant son, Kumar Harinath.

The estate then came under the management of the Court of Wards. Harinath attained his majority in 1820. In recognition of acts of public utility, Lord Amherst, the then Governor-General of India, conferred upon him, in 1825, the title of Raja Bahadur. He was an accomplished Persian scholar and able accountant, and under his patronage Sanskrit learning flourished at Cossimbazar. The establishment of several *chatuspatis* (Oriental schools) associated with such names as those of the famous Pundit Krishna Nath and others, bore eloquent testimony to the warm interest taken by the young Raja in the culture of the classical language of the East.

Harinath had by his wife, Ranee Harasundari, who is still living, a son, Kristonath, and a daughter Govinda Sundari.

Kristonath was a minor when in 1832 his father, Raja Harinath Bahadur died, and the estate was for the second time administered by the Court of Wards. Raja Harinath gave Koomar Kristonath an excellent education. Digambar Mitter, an ex-student of the Hindu College, who was serving under Mr. Russell at Murshidabad, taught him English and he studied Persian with his father.

MAHARAJA MANINDRA CHANDRA NANDY.

Kristonath assumed charge of his Estate in 1840, and appointed his former tutor, Babu Digambar Mitter, his Manager. In a freak of generosity he gave him a handsome honorarium of a lakh of rupees.

In 1841 Kumar Kristonath obtained the title of Raja Bahadur from Lord Auckland.

On his accession to the *guddi*, he gave himself up to pursuits of pleasure.

Kristonath was an enthusiastic advocate of education. He died in 1844, leaving a widow and two daughters.

Immediately after his death, the East India Company, by virtue of his will took possession of the whole estate.

The estate was literally in an insolvent and disorganised condition when the widowed Ranee got possession of it. Her administration, however, proved successful, and in recognition of her meritorious public services, Lord Mayo bestowed upon her the title of Maharani in 1871, when her Dewan Rajib Lochan was made Rai Bahadur. Four years later, in 1875, the Maharani received a voluntary pledge from the Government to confer on her heir the title of Maharaja.

On the 14th of August 1878, the Commissioner, Mr. Peacock, deputed by His Honor the Lieutenant-Governor, held a Durbar to decorate the Maharani with the Insignia of the Imperial Order of the Crown of India, and to present her with the Royal Letters Patent.

After the death of the Dewan, the management passed to a Committee of six gentlemen selected from among the responsible and highly placed officials of the Raj, and this arrangement continued for about eight years, when Babu (afterwards Rai Bahadur) Srinath Pal, the nephew of the Maharani, was appointed Manager to the Estate.

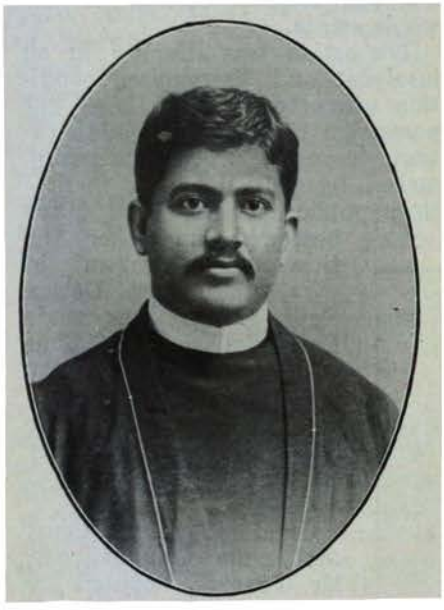
The Maharani died at the age of 70.

The estate then reverted to Ranee Hara Sundari, the widow of Harinath, but she relinquished her title in favour of the next reversioner, Manindra Chandra, her grand-child by her deceased daughter, Govinda Sundari.

Manindra was born in Calcutta in the year 1860 in the house built by his late father at Shambazar. The ancestors of Manindra Chandra lived at Mathrune where his father Nobin Chandra was born. He

succeeded to the estates of his aunt and removed to Murshedabadat the age of 38.

After his accession to the *guddi*, Manindra was called upon to complete the Water Works at Berham-



The late MAHARAJ KUMAR.

pore which his aunt had left unfinished. This scheme cost the Raj about two lakhs and-a-half. In his zeal for the cause of education, he gave an undertaking to the Government of Bengal to continue maintaining the Berhampore Krishnath College at an increased charge of about twenty-two thousand a year. On the 30th May 1898, the Government, in fulfilment of its pledge to the late Maharani, confirmed Manindra as Maharaja of Cossimbazar. At a Durbar at Belvedere H. H. the Lieutenant-Governor presented him with the *Sanad* and *Khilat* and eulogised his predecessor, the late Maharani Surnomoyee.

The Maharaja is an active worker, he has served on the Municipal Board of Berhampore as its Chairman, and takes the keenest interest in the affairs of the Municipality.

He represented the British Indian Association in the Bengal Legislative Council, and was recently elected a Vice-President of the All India Victoria Memorial Committee, formed under the auspices of His Excellency the Viceroy.

His family now consists of one son and two daughters. The late Maharaj Kumar graduated in the Calcutta University in 1905 and was preparing for the B.L. Degree. He died on the 26th March 1907, at Gobardhan, a holy place in the District of Muttra, on a pilgrimage with his father. During his short but remarkable career he had greatly distinguished himself by his many-sided private and public virtues and his untimely death was deeply deplored throughout Bengal. The 2nd Maharaj-Kumar Kirti Chandra,

Kumar SRISH CHANDRA NANDY.

born on the 18th May 1895, died on the 28th October 1903. The youngest Maharaj-Kumar Srish Chandra was born on the 11th October 1897, and though not yet in his teens gives promise of a good career.

The KANDI AND PAIKPARA Raj Family. Noteworthy among the ancient aristocracy of Bengal is the Kandi and Paikpara Raj family, now generally known in the Province as "Lala Babu's family," which belongs to the "Uttar Rardhi" class of Kayasthas, and can trace its origin back to its founder, Anadibar Sinha, settled in Bengal in the reign of Adisur, King of Gaur, in the 9th century. The earlier records of the family are somewhat obscure, and there is lack of continuity over a considerable period following the settlement of the founder in Bengal as a feudal chief under King Adisur. Anadibar Sinha was an emigrant from the North-West Provinces, and he and his family evidently prospered in the province of their adoption, for it is recorded that Rana Madan Singh, who was the fifth in descent from the founder, maintained regular troops, and served as a vassal to the Hindu king of Bengal. There occurs here another hiatus in the family history until we come to Raja Laksmidhar Sinha, eighth in descent, who was styled a Karan-Guru, or Lord Guide of the Uttar Rardhi community, and was noted for his wealth, piety, and charitable deeds. His son was the famous Vyas Sinha, one of the ministers of King Ballala, who suffered a martyr's death in the cause of his faith. Twelfth in descent was Raja Binayak Sinha, who was an extensive land-holder and zemindar under the Slave Kings of Delhi. Next in this fragmentary historical record comes Raja Laksmidhar II. He was famous for his charity and piety, and, with his son, rendered considerable service to the Mohammedan rulers in the internal administration of the empire. Two brothers, Rajas Jidabhara and Pravakara, were sixteenth in descent, and on account of their extreme devotion to religion they were proclaimed by the Kayastha (Uttar Rardhi) com-

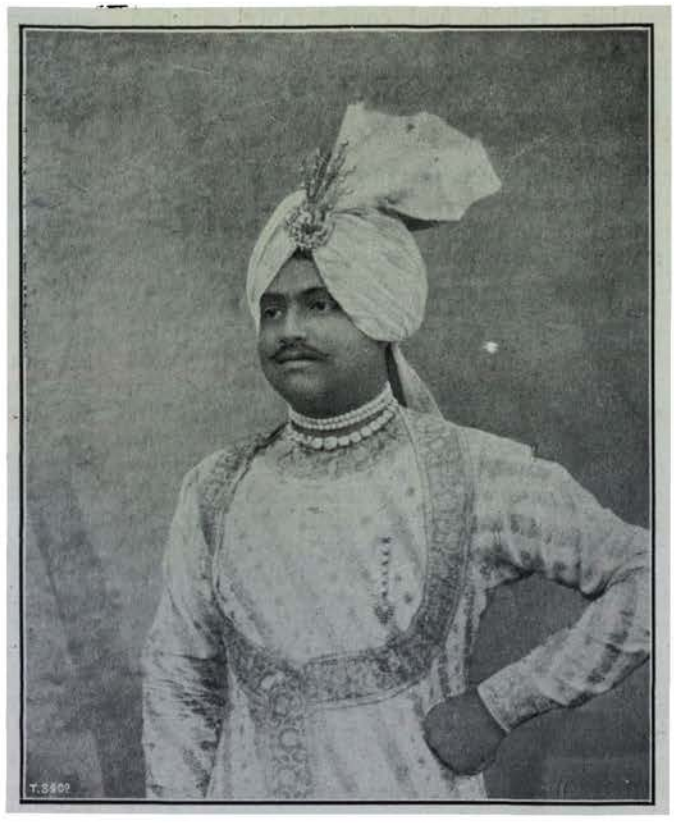
nunity as heads of the clan; and to this day their descendants stand high in the general classification among the community.

We touch more solid ground when we come to Harekrishna Singha, who was the first member of the family to settle at Kandi, in the district of Murshedabad, where he commenced his career as a banker, and later on operated extensively in silk. During the Mahratta incursions, Harekrishna migrated to Boalia, a village on the eastern bank of the Bhagirathi River. He subsequently purchased this village, together with others, by presenting 'Nazarana'' to the Nawab of Murshedabad; and Boalia still forms part of the estate of the Kandi Raj family. Harekrishna, with his whole family, became a convert to Vaisnabism. His son, Muralidhar Sinha, was, like his father, a banker and merchant, and he had three sons, Narayanchandra, Gauranga-sunder, and Beharilal. Of these, the second was the most celebrated. He became an officer of the Bangadhikari, acquired vast wealth, and was granted mahals, taluks and lakhiraj lands. He is said to have obtained a Sanad in perpetuity at Kandi from Shah Alam II, Emperor of Delhi, for the purpose of endowing the shrine of Thakur Sri Sri Radhaballavjiu. Having no issue, he adopted his nephew, Radhakanta, the second son of his brother Beharilal, as his heir. Radhakanta Sinha, when he succeeded his adoptive father, continued in employment under the Bangadhikaris, and amassed vast wealth on his own account. Later on he came into considerable prominence in those stirring times, when Clive was fighting for the supremacy of the British in Bengal. Radhakanta was a high revenue officer under Ali Verdi Khan and Siraj-ud-Daula, Nawabs of Bengal, and when the British obtained the Dewani of the Subas Bengal, Behar, and Orissa from the Emperor Shah Alam II of Delhi, he rendered great service to the former by placing at their disposal the necessary settlement and collection papers. Radhakanta did not remain long in the Nizamut, for Siraj-ud-Daula, who was then at the height of his power, suspected him of communicating with the British, and he fled to Nuddea, where a conspiracy against Siraj-ud-Daula was then in progress. He divulged to the emissaries of Clive the state of the feeling that existed among the officers of the army of Siraj-ud-Daula, and the results of the Battle of Plassey showed that the information supplied was correct. When the Nawab Mir Jafar was installed on the throne, Radhakanta was appointed by Clive to manage the affiars of the Revenue Department, and was later appointed Dewan or Kanungo under Clive. He also attained other honours and rewards. He was an orthodox Hindu, and considerably enriched the shrines at Kandi. He appointed his third and fourth brothers, Radhacharan and Gangagobinda, to the management of his religious endowments. Of the first-named there is little to be said, but Gangagobinda appears to have been a man of note, and he took a leading part in the politics of his day. He began his career as a Kanungo under Mahomed Reza Khan, and his untiring energy and acute judgment in revenue matters attracted the attention of Warren Hastings, the future Governor-General, who was at the time an employé of the East India Company at their silk-factory at Cossimbazar. When, in 1772, Warren Hastings became Governor of Bengal, he appointed Gangagobinda his public Dewan; but in 1775, Hastings being then Governor-General and the anti-Hastings Party being powerful, the latter were instrumental in procuring the removal of Gangagobinda from this post. When, however, the following year Hastings and his party regained the upper hand, Gangagobinda was reinstated in his former position.

It was shortly after this that the system known as the "Double Government" was abolished, the reorganization of the Judicial and Revenue departments undertaken, and properly constituted Civil and Criminal Courts established throughout Bengal; and in all this, Mr. Hastings derived valuable assistance from the experience and fiscal knowledge of Gangagobinda, specially in his new assessment of zemindaries and taluks in Bengal for the purposes of revenue. Mr. Hastings later abolished the Provincial Councils, and appointed Gangagobinda as Dewan of the Committee of Revenue, while his son, Prankrishna, was made Naib Dewan of the Committee. Advancement followed advancement, and Gangagobinda Sinha enjoyed the entire confidence of Hastings, being frequently employed on delicate missions requiring tact and judgment. Eventually he was sent to Dinajpur to administer the zemindary during the minority of the young Raja, whose guardian he became. As a reward for these services he claimed from the Government a large portion of the Dinajpur Raj, and his claim was strongly supported by Hastings in the Council. The claim was, however, disallowed; and the favours shown to Gangagobinda by the Governor-General subsequently furnished various strong points of vantage in Burke's impeachment of Warren Hastings, to the State papers in connexion with which those desirous of pursuing the subject further are referred. Gangagobinda Sinha was zealous in the promotion of the Hindu religion, and he performed the Sraddha or funeral ceremony of his mother with immense pomp, and at a cost of twenty lakhs of rupees. In addition to the funeral obsequies of his mother, Gangagobinda performed two other ceremonies with great display; in fact, it is stated that their like has never been witnessed in Bengal. The first was the Annaprasan of his grandson, Krishnachandra, better known as Lala Babu, on which occasion invitation cards to pundits were engraved on gold leaves; the second was the Puran or chanting of the sacred Purans, at his house in Belur. Gangagobinda also built four splendid temples at Ramchandrapur. He was a staunch advocate of Sanskrit learning, and encouraged the Pundits of Nuddea, contributing largely to their support, and to that of their disciples, repairing their houses and providing them with food and raiment. His last days were devoted to acts of charity. He left an only son, Prankrishna Sinha, who inherited the bulk of his father's wealth. Prankrishna also inherited the property of his uncle, Radhakanta, who being childless had adopted him as his heir. So that in Prankrishna was vested the main portion of the family wealth. In his early years

Prankrishna had been taken by his father to Calcutta, where he acquired a good knowledge of Persian and became a good business man. At the outset of his career he was employed under Government in the Settlement Office at Azimabad, and he subsequently became Naib Dewan under the Government. He added very materially to the family estates, and is reputed to have been devoted to religious exercises, and to have maintained the worship at the various shrines which had been endowed from time to time with portions of the family wealth. Prankrishna died a broken-hearted man, owing to a disagreement with his son, Krishnachandra Sinha, some years previously; after which, father and son never again met.

Krishnachandra Sinha, the famous Lala Babu, by whose name the family is now known, displayed from a very early age an intense devotion to study, and with the means at his command, he engaged the most eminent teachers to coach him in Sanskrit, Persian and Arabic. Early in life, owing to the misunderstanding with his father, above alluded to, he resolved to leave his home and earn an independent livelihood. His first start was made in Burdwan, where he secured the post of Sheristadar, under Government. Subsequently, in 1803, when the British took possession of Orissa, he was appointed Dewan in charge of the settlement. After the death of his father he resided chiefly in Calcutta, managing his extensive properties, and studying the Purans, for which purpose he always had about him a number of learned pundits. He mixed but little in society, and in later life he proceeded to Brindabun, with the avowed intention of becoming a recluse. Before leaving home he made arrangements for the education of his only son, Sri Narayan, and the control and guidance of his household. The main object of his visit to Brindabun was, however, the erection of a magnificent temple in honour of the god Krishnachandra Jiu, and for this purpose he took with him the sum of 25 lakhs of rupees. The fame of his wealth soon spread abroad and excited the cupidity of the dacoits of the neighbourhood, who plundered his house and carried off three lakhs of rupees. Other misfortunes overtook him, and he became involved in political troubles, which provide material for an interesting



Kumar BIRENDRA CHANDRA SINHA.

chapter in the family history. Suffice it to say that the arrest of Krishnachandra upon a charge of conspiracy against the State was ordered by Sir Charles Metcalfe, who was at the time Resident at the Court at Delhi, with plenary powers as Commissioner to deal with all offences against the British Government. The charge was in connexion with a treaty, to prevent the signature of which by one of the Chiefs of Rajasthan, Krishnachandra was alleged to have intrigued. Krishnachandra, or as he was called Lala Babu, was conducted to Delhi, but so strong was the feeling aroused that Sir Charles Metcalfe, before bringing him to trial, was induced to make further enquiries into the character and antecedents of Krishnachandra, who, as a result, was honourably acquitted of the charges brought against him. Further than this, Sir Charles Metcalfe took Krishnachandra to the Court of the Emperor of Delhi where in full Durbar he presented him to His Majesty as one who, with his ancestors, had rendered exceptional services to the Government in posts of the highest responsibility. A month later, Krishnachandra returned to Brindabun, to the great joy of the inhabitants. His stay in Delhi had not been altogether profitless, even although he declined the title of Maharaja, which the Emperor wished to confer upon him; for while there, he purchased an extensive zemindary, as well as nearly the whole of the villages in the district of Mathura which were famous as having been the venue where the great avatar, Krishna, held his gambols and pursued his dalliances, as related in the sacred Purans. The temple which Krishnachandra built at Brindabun is by far the most lofty of any of the sacred buildings in the United Provinces. The Thakur Krishnachandra Jiu stands upon a marble pedestal inside the principal temple, and is the best adorned idol in all Brindabun. Having built the temples and endowed them with large estates, Krishnachandra repaired to the shrine of Gobardhan, in the district of Mathura, and here he renounced all wordly cares, and became a Yogi. It is said that after he had assumed the garb of a Sannyasi, he held no converse with his fellow-men; and so strict was his rule in this respect that it indirectly caused his death. In his efforts to avoid the Maharani of Gwalior, who when on a pilgrim-

age to Gobardhan insisted upon making her obeisance to so pious a man, he was trodden upon by one of her horses, and he died from the injuries then sustained. His son, Sri Narayan Sinha, being a minor, the Board of Revenue took over the management of the estate. Of Sri Narayan there is little to be recorded. He died at an early age, leaving two widows, but no issue, and by his will he gave permission to the widows to adopt, according to the provisions of the Hindu law; while by virtue of the same will, his mother, Rani Katyayani, was to manage the vast property. The Rani, who appears to have been a remarkable woman, not only managed the estates with ability but added to them very materially. It was in her time that the Paikpara Rajbati was constructed and the celebrated *Thakurbari* of Sri Sri Gopaljiu at Cossipore was established by her. Proper endowments were made, and the *Thakurbari* stands as a tribute to her memory to this day, and is one of the family residences, pleasantly situated on the banks of the river. It was at the instance of the Rani, too, that the two widows of Sri Narayan, Tarasundari and Karunamoyi, adopted the second and third sons of the Rani's brother, as their respective sons, under the names of Pratap Chandra and Iswara Chandra. When these adopted sons reached their majority, the management of the estate was made over to them by the Rani, who, for the remainder of her life, devoted herself to acts of benevolence. Her charities were very extensive, and among other notable acts she celebrated, at the family house at Belur, the Anna Meru and the Tuladan ceremonies, at which immense stocks of provisions and other necessaries were laid in for the entertainment of the numerous guests. At the first named festival, pecuniary presents were bestowed upon the pundits of Benares, Navadwipa, Dravida, and other celebrated Samajes, and money was freely distributed to the Brahmins and the needy, at a total cost of five lakhs of rupees. At the Tuladan ceremony the Rani had herself weighed against gold, and the amount realised was distributed amongst the Brahmins. She dedicated a large estate to her spiritual guide, and made suitable endowments for the maintenance of the Dev Sheba and the Charity House therewith connected; and after devoting about sixteen lakhs of rupees to various religious and charitable purposes, she passed away at a ripe old age.

The career of Pratap Chandra was marked by many instances of the benevolence so characteristic of the family. He contributed largely towards the erection of the Medical College Fever Hospital, and to the fund for promoting the re-marriage of Hindu widows. Educational and other institutions might always rely on him for support. In 1859 he established an Anglo-Sanskrit High School at Kandi and a High English School at Paikpara. On behalf of female education he was a strenuous and bold advocate, and he supported the female schools established in his time by the late Pundit Iswarchandra Vidyasagar. The public associations and institutions of the Metropolis commanded his active co-operation, and there was scarcely a movement intended for a public purpose that did not receive his support. It is, however, with the British Indian Association that the name of Pratap Chandra is inseparably connected. He was one of the founders of the Association, and it was at his house that the inaugural meetings were held. He subscribed Rs. 3,000 per annum to its funds, and was appointed its Senior Vice-President in 1861. In the revival of the Hindu drama both Pratap Chandra and his brother, Iswara Chandra, took the lead, and it was due to their efforts that the first amateur Hindu theatre was established at their well-known villa at Belgachia, at which the initial performance was given in 1858, in the presence of Sir Frederick Halliday, then Lieutenant-Governor of Bengal, the Judges of the Supreme Court, and many other officials. During his lifetime the estate was again materially increased, and the Belgachia Villa was purchased by him from the trustees of Dwarkanath Tagore. The estate, however, was involved in a considerable amount of litigation on which a great deal of money was spent. In April, 1854, the title of Raja Bahadur was conferred on Pratap Chandra by Lord Dalhousie. The Investiture was held at Government House, Calcutta, and the Sanad, which was in Persian, was couched in terms that showed the appreciation by the Government of the services rendered by Pratap Chandra as a public-spirited citizen. The Raja died in 1866, at the age of 39, leaving a widow and four sons. On his death, the estate passed under the management of the Court of Wards, and remained in its charge until 1879.

Iswara Chandra Sinha, the younger brother of Raja Pratap Chandra, devoted himself largely to scientific pursuits, and to the study of medicine. He founded a charitable dispensary at the Paikpara Rajbati, where he dispensed medicines to the poor with his own hands, and otherwise relieved their necessities. At the same time he was a keen sportsman and maintained a racing stable. He was also an influential member of the British Indian Association, and was for several years its Honorary Secretary. He died in 1861, leaving an only son, Kumar Indra Chandra Singha, and a daughter. The two brothers had rendered faithful service to the Government in the Mutiny of 1857. News was conveyed to the Rajas from their zemindary at Bhuluya that the native regiment stationed there had mutinied, and was about to loot the Treasury. The Rajas at once ordered the collection of all the able-bodied men on the estate for the protection of the Treasury, and the treasure was safely removed to the Rajas' well-built Kutchery-house, which was held in force by the Collector and the Rajas' men. These measures had the effect of quieting the neighbouring districts, where the efforts of the Rajas to allay the widespread panic were successful. For the purpose of guarding the road from Calcutta to Barrackpore, they employed in their service a number of European seamen.

At the time of the visit to India of H. R. H. the Prince of Wales (now H. M. the King-Emperor) the Paikpara Raj family was represented by Kumar Girish Chandra Sinha, the eldest son of Raja Pratap Chandra Sinha; Kumars Purna Chandra

Sinha, Kanti Chandra Sinha, and Sarat Chandra Sinha, his second, third and fourth sons, and Kumar Indra Chanda Singh, the only son of Raja Iswara Chandra Sinha. Of the entertainment given in honour of the present King, in the grounds of the Belgachia Villa of the Paikpara Family, mention will be made further on. Of these five representatives of the family, Grish Chandra died in 1877, in the prime of his life. He left a munificent bequest of Rs. 1,25,000 for the maintenance of a hospital at Kandi. He was a high-minded gentleman, and singularly free from the pride of rank and position. Purna Chandra was a great traveller, and visited most of the places of note in the country. The sacred places and shrines of India were objects of his special interest. He was famous for his benevolence, and was specially invited to attend the Proclamation Durbar at Delhi in 1877. In 1885 the title of Raja Bahadur was conferred upon him as a mark of personal distinction. He died in 1890. Kanti Chandra predeceased his brother Purna Chandra, dying in 1880. He was a keen sportsman, and owned race-horses. He left a widow, but no issue, and his estates were vested in his brothers. Kumar Indra Chandra will be remembered by many of the present generation of Europeans in Calcutta, as one of the most courteous and kindly-hearted of the Indian gentlemen of his day. He was a great patron of the Turf, owned a number of useful race-horses, and presented a cup, the Paikpara Cup, every year. He was a great patron of Music, and in Literature he made more than a fair reputation. He encouraged technical education and took an active part in the arrangements for the Calcutta Exhibition of 1884, and was largely instrumental in collecting the Indian exhibits for the same. He was the pioneer among the orthodox Hindu community in the contention that sea-voyages are not prohibited by the Hindu Shastras. He convened an assembly of learned pundits, and members of his clan of orthodox Hindus, and expounded to them his views, urging that a doctrine of superstition was out of date, and that it was folly on their part to oppose a movement pregnant with such vast possibilities. The time was not ripe, however, for his advanced ideas, and his arguments failed to convince the pundits and his clansmen. They dissented from his project, and his scheme, for the time being, failed. The Kumar was present at the Proclamation Durbar at Delhi in 1877, by special invitation; and he took a prominent part in the reception of Lord Ripon at the Belgachia Villa, just previous to his departure from India. Frank, high-minded, and generous, he was respected by all classes of the community, and commanded the regard of those with whom he was brought into actual contact. In his later years, following the example of some of his ancestors, he became an ascetic, and lived like a Sannyasi, assuming the title of Bodhanundanath Swami. He died in 1894, at the age of 37; leaving an only daughter, who also died at an early age.

The entertainment at the Belgachia Villa in 1875 to H. R. H. the Prince of Wales (now the King-Emperor), was an altogether voluntary move on the part of the Indian people of Bengal, who subscribed cheerfully, and sought to give expression to their joy at the advent of their future Emperor by inviting His Royal Highness to a purely oriental entertainment. The grounds of the Villa were well suited to the purpose, for they comprise about 130 acres, and are laid out with artistic taste. The place teems with historic associations, and possesses a magnificent collection of oil-paintings, representative of the art of Giovanni, Dubufe, Constable, Guido Reni, Opie, Eastlake, Cagliari, Etty, and other masters of world-wide fame. Some of these pictures were purchased from the collection of Raja Dwarkanath, who secured them during his visit to Europe, but the major portion of the collection was acquired by Raja Pratap Chandra from the most famous of the picture-galleries of Europe. It is undoubtedly the finest private park in Bengal. Since it came into the possession of the Paikpara family, the property has been considerably enlarged and improved, and its present owner, Kumar Sarat Chandra Sinha, has entirely re-modelled the beautiful grounds. The garden was the favourite resort of Lord Auckland, Lord Ellenborough, Lord Dalhousie and Lord Canning, and was for a long time remarkable as a place of meeting for all persons of distinction and talent.

Kumar Sarat Chandra Sinha, the fourth son of Raja Pratap Chandra Sinha, is now the senior representative of the House, and the titular head of the family. He was born in 1859 and was educated first at the Metropolitan Institution and Hindu School, and afterwards at home, under able teachers. Since he took over the management of his estates considerable additions have been made to the property, and a number of family disputes, which had long been pending, have been satisfactorily settled. The Kumar, in conjunction with others, has started an association known as the Uttar-Radhi Kayastha Sabha, for the furtherance of the interests, education, aid and progress of members of his clan, and he is unanimously recognised as President of the Association. As a staunch Hindu, he has always maintained the traditions of his princely house, in the celebration of religious ceremonies at Cossipore and at Kandi. He is also an ardent tourist, and has visited almost all the famous and holy places in the country. He has entertained the leading officials of his time, from Sir Rivers Thomson to Sir Andrew Fraser, either at his town residence or at the Belgachia Villa; and when the Chinese Plenipotentiary, Tang Saho Yi, was in Calcutta, he accepted his hospitality at his Cossipore residence, the Thakur-Bari. He takes much interest in engineering and photography. The improvements that have been carried out at the Cossipore Tharkur-Bari, the Kandi Rajbati, and the Belgachia Villa, are all from designs executed by himself, and he has a fine collection of photographs of the most famous places in India, all of which were taken by himself. He has contributed largely to charities public and private, and gave a handsome donation towards the proposed Victoria Memorial Fund. He is of a most affable disposition, a broad-minded gentleman with a love for things refined and beautiful, and a leaning towards the mystical and occult. He has for his Secretary Baboo Hari Mohan Banerjee,

who has made a special study of astrology, palmistry and Sanskrit philosophy.

Kumar Birendra Chandra Sinha is the eldest son of Kumar Sarat Chandra, and is the most promising scion of the family. He was born in 1881, and was educated first at the Metropolitan Institution, and subsequently by a private tutor. He is a warm-hearted and philanthropic gentleman, with a liking for travel, in which he has received every encouragement from his father, and a taste for photography, horticulture, and the decorative arts. As a scholar, he has acquired a solid foundation in English literature, and a fair knowledge of Sanskrit. He is of active habits, more inclined to action than to speech, and is endowed with the virtues of thrift, patience, and industry. He finds recreation in motoring, but in all the various pursuits to which he is partial, he is thorough. Perhaps horticulture and landscape-gardening are his favourite occupations just at present, and in the latter direction he finds ample scope for the exercise of his talents in the grounds of the Belgachia Villa, to the improvement of which he devotes a good deal of his time. Photography, too, is to him something more than a mere hobby. In religious matters, new forms of thought have an attraction for the young Kumar, who is not narrow in his views, his inquisitive mind inclining to a continual pursuit of knowledge. Like many of his forefathers, he takes an active part in public affairs, he is a prominent member of the British Indian Association, and an Honorary Presidency Magistrate of the First Class. His sympathies with suffering humanity are large, and he collected funds, and made a handsome donation, towards the relief of those who suffered by the great earthquake in the Kangra Valley in 1905. During the visit of T. R. H. the Prince and Princess of Wales to Calcutta in 1906, he acted as a Page to His Royal Highness. He has also been nominated as Committee member of various societies and institutions in connexion with the Government. The retiring nature of his father has afforded him an early opportunity of looking after the affairs of his vast estates, and he has thus acquired a fair knowledge of the intricacies of zemindary management. He possesses a good library, which receives considerable additions every month.

The second son of Kumar Sarat Chandra Sinha was Kumar Jitendra Chandra who was born in 1885 and died twenty years later. He was educated at the Metropolitan Institution and read up to the matriculation standard. He was a youth of good promise, and his early demise was a severe blow to his family.

Kumar Satish Chandra Sinha is the eldest son of the late Raja Purna Chandra Sinha, and was born in 1875. He was educated at the Metropolitan Institution, but owing to the death of his father, his academical career was brought to an early close, and his studies were completed at home. He devoted special attention to Literature, Science, and the Drama, and it is mainly to his interest in the latter that the Indian Sangit Samaj owes its present flourishing condition. The dramatic members of the Samaj are elected from the Indian aristocracy of Bengal. The Kumar himself is gifted with dramatic genius of a high order, and has dramatised for the stage of the Sangit-Samaj several works, such as Bakim Chandra's *Krishnakanta's Will*, and *Mrinalini*. Like his father, he is of broad sympathies, but his charities are for the most part of a private nature. A large number of widows, orphans, and schoolboys receive aid from him and his purse is always open to really deserving cases. In his private life he is prudent, just, and honourable, and of a religious turn of mind. Motoring, touring, and photography are amongst his recreations.

Kumar Sirish Chandra was the youngest son of Raja Purna Chandra. He was born in 1880, and received his education at the Metropolitan Institution. As a charitable and sympathetic man, the Kumar gave promise of a useful career, but he died at the age of twenty-two. He will be remembered by posterity for the munificent donation he made to the Kandi Charitable Hospital, which was founded by his adoptive father, Kumar Girish Chandra.

Kumar MANMATHA NATH ROY CHOWDHURY of Santosh belongs to one of the most ancient aristocratic families in Bengal, from which came Maharaja Pratapaditya and Raja Basanta Roy of Jessore. His ancestors migrated from Jessore and settled at Santosh in the beginning of the 17th Century. The family is among one of the richest *Kayastha* houses in the province. During the time of the Moghul Emperors, they exercised exclusive rights over their estates.

Kumar Manmatha Nath who is only a young man, just stepping into manhood, has already made a reputation for himself. He maintains the Dwarkanath charitable hospital, named after his late father, and the Bindubashini Girls' and H. E. Boys' Schools, named after his mother. He also supports for the good of his tenantry a large number of Middle English Schools and Middle Vernacular Schools, as well as charitable dispensaries. He recently inaugurated a well equipped college in his own subdivision. Spacious and comfortable boarding houses have also been erected for the free accommodation of students. He manages these institutions himself as their Proprietor Secretary, and takes the keenest possible interest in the educational problem of his country, as his pamphlets and letters to Lord Curzon on this subject show. The Kumar has given a building, at his own cost, for the District Board Veterinary Hospital in the town of Mymensingh.

The Santosh family have also established, at considerable expense, a *Dharmshala* in the holy city of *Ajudya*, and an *Atil-Shala* at Santosh, where food and shelter are dispensed free to pilgrims and travellers.

Gifts of landed property have been made by the Santosh family from time to time, for religious endowments and charities, which yield an annual income of nearly twenty thousand rupees. Since the demise of his late lamented father, the Santosh estate have spent about five lakhs of rupees for public and charitable purposes.

The Kumar is a benevolent and cultured member of Indian society. He bears an exemplary character and his private charities are unbounded

and unostentatious. He is gifted with distinct talents, and is considered to be a rising orator and politician. The speech which he delivered at the Woodburn Memorial Meeting presided over by H. E. Lord Curzon, elicited praise both from the European and the Indian communities. His essays and speeches, which have been published in a big volume, have been highly spoken of by eminent men, such as Lord Ripon, Sir Charles Elliot, and Sir Walter Lawrence. He received his early training in St. Xavier's College, and his University education at Hare School and the Presidency College. He reads extensively at home where he has a splendid library of his own. His published writings show him to be an accomplished and thoughtful writer. He is a liberal but cautious social reformer, and his forcible appeal in support of the sea-voyage movement created a good deal of sensation. The leading journals and public men of his province have pronounced him to be "an honour to the territorial aristocracy of Bengal, one who combines in him the aristocracy of wealth with the aristocracy of intellect." He has founded many useful associations and has been their guide. His palatial residences at Santosh, Calcutta and Chunar do credit to his æsthetic taste. He is a fine rider and has beautiful horses and elephants. His magnificent motor landaulet shows that he is progressive in every respect.

He is a strong advocate of technical education, and also of temperance, in support of which, he has delivered speeches and written essays and pamphlets. It was he who first sent from Bengal a young man to Japan for technical education.

In recognition of his services he was appointed secretary to the Education Committee of the Bengal Landholders' Association. He is also an influential member of the governing body of the British Indian Association.

Among his public gifts he has contributed Rs. 50,000 towards the All-India Victoria Memorial Fund, of which he is a vice-patron, and liberally contributed for the Coronation Drinking Fountain in the Zoological Gardens, Calcutta.

As a zemindar, the Kumar is very popular. During the scarcity in 1901, he helped his distressed tenants, and advanced large sums to enable them to tide over their difficulties. Besides he has always come forward with liberal donations whenever relief funds have been opened under Government supervision during famines. On his first tour round his estate he received right royal ovations and many appreciative valedictory addresses everywhere. In some places the people subscribed for portraits of the Kumar and had them unveiled with great éclat. In recognition of his efforts for the public good he has been granted by the Government a first class certificate of honour and private interviews with their excellencies Lords Curzon and Minto, and was also presented to H. E. the Commander-in-Chief. At the time of His Excellency Lord Curzon's departure the Kumar received from the outgoing Viceroy special copies of his published speeches, together with a copy of his photograph and autograph signature. The Kumar had the pleasure of entertaining His Honour the Lieutenant-Governor of Bengal and Lady Fraser as his guests. After the partition of Bengal he received H. H. Sir L. Hare and Party at Tangail, and entertained them in a right royal style—the place of entertainment being charmingly decorated with rare works of art in ivory, silver and gold. After lunch the Kumar held a Durbar where His Honour and party were photographed with the Kumar by the side of the Governor.

Kumar MANMATHA NATH ROY CHOWDHURY AND HIS SON.

The Kumar has proposed to commemorate this visit by adding a separate female ward to his Hospital to be named after Sir Lancelot Hare.

His loyalty and devotion to the Government of his great King are unimpeachable, and he has helped the union and better understanding between the rulers and the ruled by many social functions and entertainments.

The Kumar played a prominent part in connection with the festivities and receptions arranged in honour of the Royal visit to Calcutta in 1905-6. He was one of the few leading men who were on the deputation that received Their Royal Highnesses, as representatives of Bengal. He was also one of those seven dignatories of the Province of Eastern Bengal and Assam who were presented to Their Royal Highnesses. Their Royal Highnesses accepted a special copy of the Kumar's English translation of "Chandra Shekhar," a book that

has been favourably noticed by leading men and journals, and the Prince and Princess of Wales were also pleased to accept the dedication of the Kumar's memoir of the Royal Visit to Calcutta. The Kumar's son, Benoyendranath is an exceedingly handsome and smart boy. He is making striking progress with his governors and already speaks good English. If he fulfils the promises of his boyhood he is destined to be a great man.

The Honourable Maharaja GIRIJA NATH ROY, of Dinajpur, was born in 1860 and educated at Queen's College, Benares. He took over the management of his magnificent property and was invested with the title in 1883, in which year he attained his majority. The Raj of Dinajpur is of great antiquity, and dates back to the 14th Century. It passed through many vicissitudes, in common with the rest of Bengal, in mediæval and modern times, till, on the death of Maharaja Tarak Nath Roy in the year 1865, while the present Maharaja was still in his infancy, the estate came under the management of his adoptive mother, Maharani Syam Mohini, assisted by her son-in-law, Khettar Mohan Sinha, whose services singled him out for the bestowal of the title of Raja by the Government of Lord Lytton. The title of Maharani conferred upon the present Maharaja's mother, Syam Mohini, already locally called Maharani, was given for her great services during the distressing times of the famine of 1873-74, when her liberal assistance enabled the raiyats of Dinajpur to tide over the crisis. Since attaining his majority, Maharaja Girija Nath Roy Bahadur has taken a very active part in the administration of the district. He was chairman of the Dinajpur Municipality for six years, and is also a member of the District Board and an honorary magistrate. As a member of the Legislative Council of the Lieutenant-Governor, his services have been of value and have received the recognition of Government. His wide knowledge and ripe experience have enabled him to give useful aid to the authorities. He has always been foremost in forwarding public movements of the day, and has shown himself willing to assist in all measures for the welfare of the people with his purse, time, and labour. His public gifts have been generous.

Maharaja GIRIJA NATH ROY, OF DINAJPUR.

He has founded the Diamond Jubilee School, Weaving School and Sanskrit Tol, and also two charitable dispensaries. At the expense of the Maharaja's estate, the Ghagra Canal and the Thomson Canal, named after Sir Rivers Thomson, formerly Lieutenant-Governor of Bengal, were built at Dinajpur, and great benefit, by improved sanitation, was thereby conferred on that town. The title of Maharaja Bahadur was conferred by sanad upon the Maharaja in 1907 at a public Durbar at Dacca, when the Lieutenant-Governor in presenting the sanad spoke as follows, after giving full recognition to the Maharaja's character and services:—"By your unswerving loyalty, high character, readiness to give your time and labour to promote all useful public objects, you have gained the high esteem of your countrymen and the grateful recognition of the Government. It is very gratifying to me to be able to express, by the ceremony of to-day, the satisfaction with which the Government has viewed your career."

Raja SREE NATH ROY, Banker and Zemindar of Dacca, Eastern Bengal, was born in 1841, and comes of the well-known Kundu family of Bhagyakul in the District of Dacca. The Kundu family have always been noted for their public beneficence, and in the days before the British Administration of India were foremost in Eastern Bengal in their zeal for patronizing Sanskrit literature, encouraging learned Hindu Pandits, and celebrating Hindu religious rites. They also gained the name of public benefactors by their great services in relieving the poor during the famines which are of such frequent recurrence in India, specially in the great famine that devastated the Province in the early part of the eighteenth century when, by their generosity, thousands of lives were saved. For this act of munificence the then ruling chief conferred on the head of the family at that time, Ram Govinda Kundu, the title "Roy" as a family distinction and also a grant of rent-free lands, the annual income of which was Rs. 1,400. The head of the f mily bears this distinction to the present day. The descendants of the f mily have continued all through the intervening time the charitable policy of their predecessors and have

spent large sums of money in relieving famine and in public and private charity in general. They earned the thanks of Government some years ago by founding the present East Bengal Saraswat Somaj for promoting and encouraging Sanskrit literature, Hindu law, philosophy and astronomy, by holding annual examinations and conferring titles on successful students. The present Raja, as prime mover in this matter, received a certificate of honour on the occasion of the assumption of the title of Empress of India by Her Imperial Majesty the late Queen-Empress Victoria in 1877. Raja Sree Nath Roy has fully maintained the traditions of his family, and, in addition, has identified himself actively with public affairs. He received a good education in the Dacca and Presidency Colleges which has fitted him for the position as head of the family. He has served as a Municipal Commissioner, and was formerly a member of the District Board, Education and Road Cess Committee, at Dacca. He has also held the position of Honorary Magistrate on the General Benches at Dacca, Munshiganj, Srinagar, and on the Independent Bench of his own at Bhagyakul. He is still a trustee of the Economic Museum, a life member of the Calcutta Zoological Gardens, and a life governor of the Mitford Hospital at Dacca. In all these capacities he has worthily upheld his reputation and gained great credit. Conjointly with his brothers, Babu Janokee Nath Roy and Rai Sita Nath Roy Bahadur, he has established many useful public institutions in East Bengal, including the Eye Infirmary at Dacca, and the Sita Kundu Water Works at Chittagong, to commemorate the name of his father, and a model bustee building for the poor at Calcutta. The brothers own and carry on many mercantile and banking businesses in East Bengal, and also the important mercantile and banking firm in Calcutta established in the name of their father, the late Prem Chand Roy. They have also established a steamer service plying between Calcutta and Dacca. They are known to Government as law-abiding, loyal, and peaceful zemindars and have received mention in successive Administration reports. Raja Sree Nath is also a Director of the recently established Bengal National Bank, Limited. In recognition of his loyalty and public spirit the title of "Raja" was bestowed upon him as a personal distinction on the 30th May 1891. He has a son, Kumar Promatha Nath Roy, born in the year 1880 and educated at the Presidency College, who now manages his whole estate. The personal and family contributions to the public funds exceed six lakhs of rupees.

Raja SREE NATH ROY.

WOOPENDRA NATH SAWOO, senior partner of the firm of Messrs. P. G. W. Sawoo, Jute Balers and Dealers, Calcutta, is the son of Patit Chandra Sawoo, merchant and zemindar. He was born on the 16th January, 1859, at Dhankurria, Basirhat, in Bengal, and was educated at the Free Church Institution, Calcutta, which he left at the age of twenty years, on the death of his father. He then placed the management of the jute firm under the sole control of his brother-in-law, Babu Shama Charan Ballav, and retired to Dhankurria to administer his ancestral property, which has been greatly extended since that time. As a zemindar he proved most just and liberal in his dealings. His care for his native village extended to the opening of well-lighted metalled roads, and he devoted great attention to the installation of excellent drains. He established a High School, practically a free institution, with a hostel attached. Young Woopendra gave all his spare time to the welfare of the school, and reaped his reward in the brilliant results achieved by its pupils at the public examinations. He also opened a charitable dispensary, which he named after his mother, Sama Sundari. This is in charge of a qualified surgeon and is richly endowed. For the improvement of the district he constructed the road known as the Dhankurria and Arbalia Road, and excavated many tanks upon his property. For many years he sat on the Bench of Honorary Magistrates at Basirhat, and on the District and Local Boards. In the famine of 1896, Woopendra Babu rendered yeoman's service to his poorer countrymen. He opened relief houses at Dhankurria, where over three thousand sufferers were comfortably housed and fed for six months, by which time a good many were able to return to their homes. Those who were utterly destitute, however, numbering over a thousand, were supplied with the necessaries of life for a further six months. These princely charities are still remembered in the district. In 1898 he sustained a severe loss by the death of his brother-in-law, Shama Charan Ballav, who had managed the jute firm in Calcutta so long and successfully. To this gentleman the

present position of Messrs. P. G. W. Sawoo is due. Woopendra Babu then returned to active business in the management of his firm. In religion, Woopendra Babu is a

Mr. W. N. Sawoo.

Hindu of the Vaishnab sect. He maintains the worship at the temple of Issur Radha Kanta Jew, established at Dhankurria, and has dedicated a large zemindari to the service of this institution. Among the other religious works he has opened a "Tol" at Dhankurria where many Brahmin youths are provided with residence and receive Sanskrit education. His large art collections at his palatial residence at 26, Gailiffe Street, Calcutta, and at Dhankurria, bear testimony to his love of art. He received Honour Certificates on the occasion of the late Queen-Empress's Jubilee, and on the Coronation of the present King-Emperor. He is now a member of the Bengal Smoke Nuisance Commission for Calcutta and Howrah.

The Hon'ble Maharaja Sir RAMESHWARA SINGH Bahadur, K.C.I.E., is the present head of the Raj Darbhunga house. His brother, the late Maharaja Sir Lakshmishwara Singh Bahadur, G.C.I.E., was popularly known throughout Bengal. The public services to the State, and the charity rendered by the late Maharaja Bahadur, have received public recognition from all classes of the community, and a handsome statue, paid for by public subscription, has been erected in Calcutta to perpetuate his memory. The present holder of the title is emulating the useful and patriotic career of his predecessors. By caste he is a Brahmin, the head of the Mithila Brahmins, one of the ten great divisions into which the Brahmins are divided. He is the second son of Maharaja Maheshwar Singh Bahadur, and was born on the 16th December 1859. At the time of his father's death, on the 18th October 1860, he was barely a year old.

His brother, the late Maharaja Sir Lakshmishwara Singh, who was some thirty months his senior, succeeded to the *guddi*, but owing to the nonage of the brothers, the Court of Wards assumed the management of the estates, and arrangements were made by them for the education of the minor princes. Maharaja Rameshwara Singh was educated with his elder brother at Darbhunga, Mozafferpur, and Benares. He acquired an early taste for learning, and displayed at school considerable ability. At Benares he was the dux of his class: and made rapid progress. By twelve he had mastered all the subjects required for the entrance examination of the Calcutta University. His age, however, prevented him from offering himself.

In the higher branches of mathematics, literature, and science, his studies have been extensive, and he is an especially good Sanskrit scholar. The European forms of athletics have always had an attraction for him. He is a good horseman, and an expert at tennis and rackets.

On the completion of his education, he was offered an appointment in the Statutory Civil Service, which he accepted: and from 1877 to 1885 served as Assistant Magistrate at Darbhunga, Saran and Bhagalpur. The knowledge of the details of administration acquired during that period has stood him in good stead in the management of the estates of the Raj.

H. H. Maharaja Sir Rameshwara Singh Bahadur.

There are few noblemen in India with a greater aptitude for business than the present Maharaja of Darbhunga, and the secret of his success is largely due to the close personal supervision which he exercises, and to the energy and industry with which he applies himself to his duties.

During the period of his service under Government he married, under a special agreement with his late brother, and obtained the maintenance grant of Perganna Bachaur in the District of Darbhunga. The

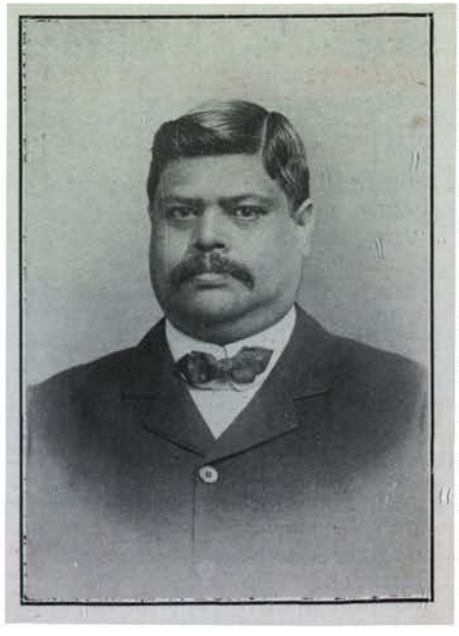
duties of management which devolved upon him in connection with this grant, interfered with the discharge of his functions as a public servant, and he tendered his resignation as Assistant Magistrate. He received the title of Raja Bahadur under *sanad*, dated the 29th May 1886, and was exempted from attendance in Civil Courts under Government notification of the 14th May 1888. From 1888 to 1890 he sat in the Bengal Legislative Council as the representative of the land-owners of Bengal and Behar.

On the death of Maharaja Sir Lakshmishwar Singh Bahadur, on the 16th December 1898, he succeeded to the *guddi* of Raj Darbhunga, and was personally invested by His Honour the Lieutenant-Governor of Bengal, on the 21st January 1899, at Darbhunga, with the title of Maharaja Bahadur. He received the Kaiser-i-Hind Gold Medal on the 23rd May 1900. Since his succession to the *guddi*, Maharaja Rameshwara Singh has been elected a Member of the Legislative Council of India by the members of the Bengal Legislative Council, and has also filled the office of President of the Zemindari Panchayat, the British Indian Association, the Behar Landholders' Association, and the Bharata Dharma Mahamandal.

In the Legislative Council he has played the part of an active and patriotic member, and his speech on the budget of 1890-91 was recognised as a masterly performance. The Maharaja is a man of simple tastes and unaffected habits. He is fond of travel and has visited almost all the sacred places in India from Kamakhya in Assam, and the Western Himalayas, to Rameshwaram in the extreme south of the Peninsula. His Highness has given signal proofs of his liberality and large-heartedness. At his succession to the Raj, he made liberal presentations to his servants. Among other benefactions he set aside a lakh of rupees, the interest of which will be devoted to the relief of orphans and widows upon his estates. To the Famine Relief Fund of the year 1900 he presented the munificent donation of a lakh and a half of rupees, as well as a lakh of rupees to the Queen Victoria Memorial Fund. He also gave thirty thousand rupees to the Mozafferpur Hospital, and twenty thousand towards repairs to the temples in Assam. Handsome contributions have also been made by him to the Transvaal War Fund, and the funds organised for the relief of sufferers by the floods in Bhagalpur and in Calcutta. His smaller gifts of charity are innumerable, and all his allowances in the Imperial Council were placed at the disposal of the Collector of Darbhunga, for distribution among the respectable widows and orphans.

As a politician, he is shrewd and far-seeing, assiduous in the discharge of his public duties, and unsparing in his labour. As a Zemindar he is considerate.

Babu DEVENDRA NARAYAN SINGHA, Zemindar, is a great grandson of Ramanando Ghosh, who, at the time when the Honourable East India Company was consolidating its position in Bengal, founded the estate of Sadarpur in Central Bengal. Ramanando Ghosh was born in the district of Murshedabad, and entered the service of the Hon. East India Company at an early age. He served faithfully and with distinction in the several silk factories of the Company, and gained great favour with his superior officers. He was held in much esteem by the Directors of the Company for the honesty and zeal which he displayed in the advancement of their business. In recognition of these services he was granted, from time to time, considerable sums of money as rewards. He remained in the Company's service till an advanced age, and died at his estate at Sadarpur. Part of the great river of Northern India, the Ganges, extending through the three districts of Rajshahye, Pabna and Faridpur, is included in the estate of Sadarpur.



Babu D. N. SINGHA.

Raja RANAJIT SINHA Bahadur, of Nashipur, son of the late Raja Kirti Chandra Sinha Bahadur, was born on the 9th June 1865. His estate was placed under the Court of Wards during his minority. The young Raja received his education at the Berhampur College, where he had a distinguished career, passing brilliantly even in the lower-class examinations. Mathematics was his strong point; in this branch of study he made quick progress. As a youth he was remarkable for his steady and straightforward character. The Raja Bahadur did not succeed to the estate without a certain amount of trouble. On his attaining his majority in the year 1886 a claim was raised on behalf of his aunt, and at first the Court of Wards was inclined to a division of the property. Sir Charles Paul was engaged to represent the interests of the Raja before the Court of Wards, he himself not being able to move as he was still a minor at the time; but through the intervention of Sir Henry Cotton, then a Secretary to the Board of Revenue, the Court of Wards agreed to retain the estate under its control until the Raja Bahadur had had opportunity allowed him to establish his claim. In the heavy litigation which followed, Raja Ranajit Sinha Bahadur was successful throughout, and was established as the sole proprietor of the Nashipur Raj. This success was largely due to the Raja Bahadur's own acumen and legal knowledge, for he took an active part in the conduct of his case, gaining the esteem of his own counsel whom he set right on certain points of procedure.

The Raja has proved a model zemindar. He has introduced rules for zemindary management, which have proved so workable that they have been adopted by many of the leading zemindars of Bengal. His offices are governed on the same system as those under the control of Government. His servants enjoy official privileges, such as leave, pension rules, etc., and no officer receives punishment until the complaints against him have been fully investigated. The Raja Bahadur himself is one of the hardest working men in his Raj. He is an early riser, getting through a couple of hours' work in the early morning. Later, he attends his office regularly from 11 A.M. to 4-30 or 5 P.M. During the cold weather months the Raja Bahadur goes on tour in the mofussil. There is not an institution, either in his own district or in Calcutta, with which he is not connected. He holds the position of a First Class Magistrate, with summary jurisdiction, and has gained the good opinion of all by his impartial justice. For six years he has acted as Honorary City Magistrate of Lalbong, and is Chairman of the Murshedabad Municipality. At one time the Raja Bahadur was a Member of the Bengal Legislative Council, and proved himself a very useful councillor. He was married on the 4th May 1883, three years before attaining his majority. He is a Hindu of the best type, and although moderate in his views, he is orthodox in all social and religious observances. His charities have been very large. The British Government has a very loyal adherent in the Raja. He has a family of five sons and four daughters. The eldest son, Kumar Bhupendra Narayen Sinha, a very intelligent boy, is married to the younger daughter of Babu Braj Mohun Lall, of Gaya; his eldest daughter is the wife of the eldest son of Babu Isri Prosad, of Ullao.

Raja Ranajit Sinha Bahadur comes of distinguished ancestry. The family originally came from the Deccan, where one of the Raja Bahadur's direct ancestors, Maharaja Tarawah, was the Ruling Chief of Bagagram in the 14th century A.D. This Maharaja, leaving his brother, Raja Rawat, in charge of his possessions, set out on a pilgrimage to Kurukhetra in the Umballa District, taking with him his son, Kumar Madan Singh. The party, after making the pilgrimage, went to Panipat, whence the Kumar proceeded to Jhind, with the permission of his father. The Kumar

Raja RANAJIT SINHA BAHADUR.

distinguished himself at this place, and becoming very popular, decided to settle there. He married the daughter of one Lala Siram, a wealthy banker, with the consent of the Maharaja, his father. Here the Kumar made his home, refusing to return to his native Raj. He had many descendants, and of these, his great grandson, Lahomall Rao, had five sons who, leaving Jhind, settled in various countries. Owing to the loss of certain family papers, the reasons that induced the sons of Lahomall to leave their country are not known. We find the family, later, settled in favour with the Emperor of Delhi, Rai Sambu Nath, one of the present Raja Bahadur's ancestors, being appointed by that monarch Nazim of the whole tract of country from Saharanpur to Meerut, and permanent Subadar and Fouzdar. The family distinguished themselves by their services. Rai Badri Dass, brother of Rai Sambhu Nath, commanded a body of horsemen under the East India Company, and took part in the battle of Shamli under Colonel Burn. Rai Tara Chand, another ancestor, received high honours from the Mogul Emperor, Jehangir, for his great services. Raja Devi Sinha Bahadur, another ancestor of the present Raja Bahadur, was the founder of the Nashipur branch of the family. In 1756 he came from Panipat to Murshedabad, then the capital of Bengal, and entered the Honourable East India Company's service in the Revenue Department, in which he held high and responsible offices in connection with the Settlement of Bengal. He farmed the revenues of Purnea, and, subsequently, of the districts of Rangpore, Dinajpore and Edracpur. In 1773, when Provincial Councils were formed, Raja Devi Sinha became steward or secretary to the Provincial Council of Murshedabad, and, later on, the office of Dewan was conferred upon him. He rendered important services to Lord Clive at the battle of Plassey, for which he was honoured by the title of Maharaja. He was succeeded by his nephew, Raja Udmunta Sinha Bahadur, who was well known for his liberality and charities. He established temples in all his mahals, and granted lands, from the profits of which Deb Seba was conducted. These grants are still maintained by the present Raja Bahadur. He granted Brahmatter lands in every village to the Brahmins, and made large donations for the public good. He was a pious and religious man, and there

was hardly any religious institution with which he was not connected.

The present Raja Bahadur is in direct descent from these great men of older times, and is a worthy representative of their fame. Descended from men who had so much

Kumar BHUPENDRA NARAYEN SINHA.

to do with the establishment of the British Government in India, the Raja Bahadur's loyalty is well founded. The British Government has no more sincere friend than the subject of this sketch, Raja Ranajit Sinha Bahadur.

Syed MOHUMMUD MAHDI HASUN Khan, *alias* Syed Badshah Nawab RAZVI, Banker and Zemindar of Guzri, Patna City, was born on 30th July 1858 (18th Zilhija 1274 A. H.). He is a descendant of the illustrious General Syed Hassun, who originally came to India with the army of Nadir Shah, the Persian conqueror. General Syed Hassun, at the express wish of the King of Delhi, left his promising young son, Syed Razi, in India with that monarch. Syed Murtaza, the son of Syed Razi, obtained honour under the King of Delhi, and the title of Khan Bahadur was bestowed upon him. Syed Abdullah, the next representative of the family, was indifferent to titles; but his two sons, Syed Mehdi Ali Khan and Syed Mohammed Ali Khan, obtained advancement, and were honoured with the titles of Khan Bahadur. The fourth son of Syed Abdullah, Syed Lutf Ali Khan, distinguished himself in the reign of her late Majesty Queen Victoria, Empress of India, and was created a Companion of the Order of the Indian Empire. Further honours were in store for him on the occasion of the Jubilee of the Queen-Empress in 1887, when he was invested with the title of Nawab by His Excellency the Viceroy, Lord Dufferin, for faithful services rendered to the Government of India. The name of Nawab Syed Lutf Ali Khan is held in high respect in Behar, where his memory is honoured by his countrymen as the generous donor of a lakh and ten thousand rupees, which laid the foundation of the technical institution now known as the Behar School of Engineering. A portrait of this illustrious gentleman now adorns the walls of the Engineering School, having been unveiled by the late Sir John Woodburn, then Lieutenant-Governor of Bengal. The subject of the present sketch, Syed Badshah Nawab Razvi, generally known as the Nawab of Patna, is a loyal subject of His Majesty the King-Emperor, Edward VII, and is ever ready to render service to the Imperial Government. On his mother's side he is a descendant of two illustrious families. His mother, on the maternal side, came of the family of Haji Mohammad Ismail who had immigrated into India, was married to the daughter of the Nawab of Bengal, and was subsequently martyred at Bussora while on his pilgrimage to Karballa. Thus a link is formed with the famous ancestor, Mullah Amad Mozindarai. On the father's side she was the granddaughter of Syed Ali Khan Bahadur, who was the grandson of Syed Abdullah Sahib Razvi. Syed Badshah Nawab Razvi is the proprietor of extensive zemindaries in the Patna and Bhagalpur Divisions, yielding an annual revenue of over a lakh and a quarter of rupees. By his wealth and position he is well-fitted to serve both the Government and his country. His interest in public affairs has always been keen, and his subscriptions in the cause of education, medical service, and charity have been continuous and on a handsome scale. In the interest of his Mussulman co-religionists the Nawab has appointed a permanent staff, with assistants, for the proper and decent interment of the remains of any of his co-religionists whose friends may not be able to perform the ceremony at their own cost. It is his present intention to make a permanent endowment of landed property to the value of Rs. 12,000 per annum, as a memorial, the revenue to be expended for religious purposes and for the help of widows, orphans, and others who are helpless and needy among his co-religionists. At the Delhi Coronation Durbar

SYED BADSHAH NAWAB RAZVI OF PATNA.

the Nawab was the guest of Government. For some time he was Vice-Chairman of the Patna Municipality and an Honorary Magistrate. His services are still at the disposal of the Municipality and Patna District Board.

Babu CALLY KISSEN TAGORE was, up to the time of his death in 1905, the head of one of the three principal branches of the distinguished Bengali family, the "Tagores," well known for their wealth, culture, public spirit and liberality. Babu Cally Kissen was born in the year 1840 and was the son of Babu Gopal Lall Tagore, a well-known zemindar

of Bengal. He was educated, first, at the Oriental Seminary, and afterwards at the Doveton College, Calcutta, where he acquired a thorough English training. Being the inheritor of a princely fortune, Babu Cally Kissen did not pursue his studies with a view to entering any of the learned professions, but contented himself with a sound general education. He remained a diligent student all his life, and devoted much attention to books of travel. Being a great lover of learning, he did his best to disseminate it among his countrymen. The Indian Association for the Cultivation of Science, during its early struggles, found in him an earnest

The late Babu CALLY KISSEN TAGORE.

and generous patron. He founded one of its chief laboratories (which bears his name) and so contributed to a work of incalculable benefit to his countrymen. He was a generous patron of authors and students, helping the former in the publication of their works, and assisting the latter in completing their education, both in India and abroad. He possessed in a marked degree the charitable tendencies of the Tagore family and distributed his bounties without reservation, to all sects and creeds. The Mayo Native Hospital, the Deaf and Dumb School, the Albert Victor Memorial Hospital, the Roman Catholic Orphanage, the District Charitable Society, the Bangiya Sahitya Parisad, and many other philanthropic and educational institutions of Calcutta, received substantial support from him. His charities, however, were not confined to his native city alone. He liberally contributed to the Anglo-Bengali School and the Macdonnell Students' Boarding Institution at Allahabad, the Leper Asylum at Dehra Dun, the Central Hindu College at Benares, the Charitable Hospital at Barisal, and many similar institutions in different parts of the country. To his friends and relations he was uncommonly generous, and the aggregate amount given by him towards various public purposes was not less than ten lakhs of rupees. Babu Cally Kissen had, however, other claims to public regard. As a possessor of great landed property, he administered the same as a model landlord, and was highly respected and loved by his tenants. He did not put himself forward in public movements, but preferred the quiet of a retired life. In the latter part of his life, Babu Cally Kissen, who had done so much to alleviate the sorrows of others, was himself heavily visited. He lost his two sons in their youth, and his wife, who was his worthy partner, soon followed them. A favourite daughter, a grandson, a son-in-law, and a daughter-in-law, died in quick succession, and to complete his sufferings he was stricken with blindness. Worn out in health and spirit, Babu Cally Kissen retired to Benares, the holy city of the Hindus. There he died in 1905, in the 65th year of his age, leaving an only grandson, Sreeman Profulla Nath Tagore, who inherits his estate.

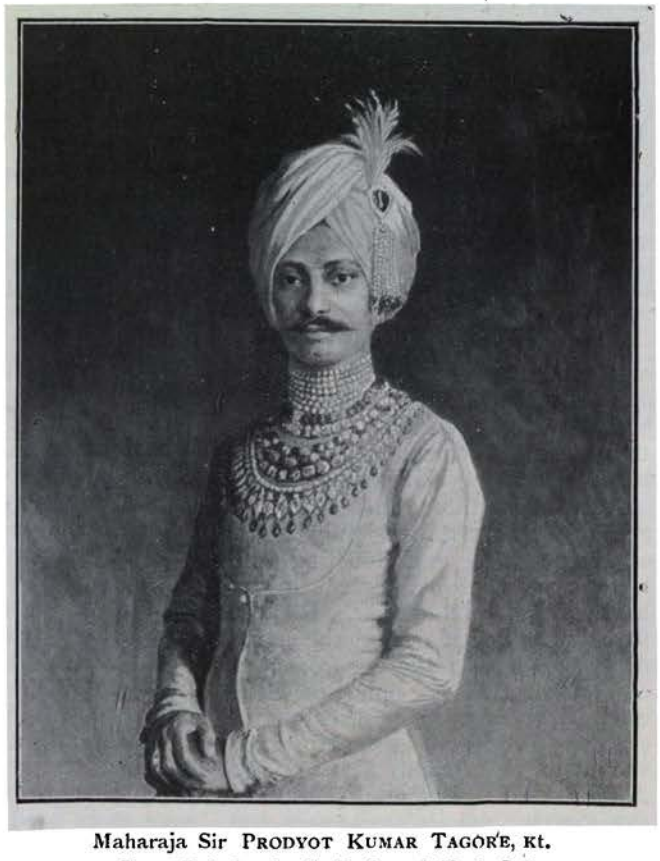
The late Maharaja Bahadur Sir JOTINDRA MOHAN TAGORE, K.C.S.I., long held a position of influence in Bengal and Calcutta. As a distinguished member of Indian society, a gentleman of high culture and a wealthy landowner, he held the confidence of Government and the respect of all classes. He was born in 1831, educated at the Hindu College, Calcutta, and at home under the guidance of the celebrated Captain D. L. Richardson and others. He gave early proof of literary culture and taste by composing several Bengali dramas and farces, and by associating with men of learning and ability. He was a member, and, for several years honorary secretary, of the British Indian Association, its president in 1879, and again in 1891. He began to attend public meetings and take a share in public affairs early in life. In the Orissa famine of 1866 he co-operated with Government in devising measures of relief in the Midnapore District. In 1870 he was nominated a Member of the Bengal Legislative Council, and reappointed in 1872. In February 1877 he was appointed an Additional Member of the Legislative Council of the Governor-General, and in recognition of the valuable assistance rendered by him in the discussion of the provisions of the Civil Procedure Code, was reappointed in 1879. On the occasion of the Imperial Assemblage, in January 1877, he was made a Maharaja. He was created C.S.I. in 1879, and K.C.S.I. in May 1882; received the title of Maharaja Bahadur in January 1890, and in January 1891 the title of Maharaja was made hereditary in the family. His donations of money and land to charitable institutions and in aid of national and public movements have been munificent. He gave a lakh of rupees in his mother's name, for the benefit of Hindu widows; effected a settlement of estates worth Rs. 80,000 to endow the Moolagori temple at Shamnagar and the feeding of paupers at the Prasad. He gave donations to the District Charitable Society and the Mayo Hospital. He founded scholarships in the name of his father, Babu Hara Kumar Tagore, who died in 1858, and his uncle, Babu Prosanna Kumar Tagore, C.S.I., on whose death in 1866 he became the head of the family. He annually gave a gold armlet for proficiency in Sanskrit literature, and a gold medal for the test examination in the Tagore Law Lectures, as well as another gold medal for proficiency in Physical Science. He filled the following offices usefully and honourably, *viz.*, those of a Justice of the Peace for the town of Calcutta, Presidency Magistrate, Fellow of the University of Calcutta, President of the Faculty of Arts, and Member of the Syndicate, 1881-2, Trustee

of the Indian Museum (President in 1882), Governor of the Mayo Hospital, and a member of the Asiatic Society of Bengal. He left by his uncle, Prosanna Kumar Tagore, and was able to make large additions to his share of the paternal property. The Tagores of Calcutta have always held a leading position in Bengal, but the late Maharaja Bahadur Sir Jotindra more than any other member of the family, combined public offices with personal status. Strictly orthodox and devoted to religious observances, he never disregarded the claims of society, civilization and culture, and gained the good will and esteem of Europeans and his own countrymen alike. It was said of him that he combined the polished politeness of the old school, with the educational accomplishments of the new, more completely than any other man of his time. By selecting him as a member of various special committees, such as the Education Commission of 1882, and Jury Commission of 1893, etc., Government showed its appreciation of his ability and character. Costly litigation took place in connection with the interpretation of the will of his uncle, Babu Prosanna Kumar Tagore. The Privy Council finally decided that the Maharaja had only a life-estate under the will, and that after his demise, the estate would go to his cousin, Babu Gaynendra Mohan Tagore, or his representatives.

The late Maharaja Bahadur Sir JOTINDRO MOHAN TAGORE, K.C.S.I.

presented to the Calcutta University the marble bust of his uncle, which has been placed in the portico of the Senate House. Jointly with his brother, the Raja Sir Sourindra Mohan Tagore, C.I.E., he presented to the Municipality of Calcutta a piece of land for a square (to be named after his father), in which he placed a marble bust of his father; he also gave another piece of land for the Mayo Hospital. He is succeeded by his adopted son (Raja Sourindra Mohan's son), Maharaj Kumar Sir Prodyot Kumar Tagore, KT. The large estates are situated in several districts of Bengal, chiefly in Rangpur, Faridpur, Purnea, Murshedabad, and the 24-Pergannas. In Calcutta he built two fine houses, "The Prasad" and "Tagore Castle," adorned with costly specimens of art, where the late Maharaja entertained with princely hospitality. He received for life the income of the vast estate

Maharaja Sir PRODYOT KUMAR TAGORE, KT.; born on 17th September 1873; only son and heir of Maharaja Bahadur Sir Jotindra Mohan Tagore, *q.v.*; married Lady Sooroja Bala Tagore. Educated at the Hindu School, Calcutta; and afterwards under private tutor, Mr. F. Peacock, Barrister-at-Law, grandson of Sir Barnes Peacock, Chief Justice of Bengal. Hon. Secretary, British Indian Association; Trustee, Victoria Memorial Hall; Trustee, Indian Museum; Fellow of the Royal Photographic Society of Great Britain; Hon. Presidency



Maharaja Sir PRODYOT KUMAR TAGORE, KT.
From Painting by G. P. Jacomb-Hood, R.I.

Magistrate, Calcutta; member of the Asiatic Society of Bengal; served for six years as a Commissioner of the Corporation of Calcutta; represented the City of Calcutta at the Coronation of King Edward VII. Knighted by H. R. H. the Prince of Wales, 1906. *Recreations:* music, photography, and motoring. *Address:* Tagore Castle, Calcutta. *Club:* British Indian Association, Calcutta.

Kumar SHYAMA KUMAR TAGORE was born in 1882. He is the son of Raja Sir Sourendro Mohun Tagore, *Kt.*, C.I.E., Mus. Doc. (Oxon.), a distinguished musician, whose substantial services in the cause of Indian music have met with recognition in various forms at the hands of the ruling power; and have also attracted attention and recognition among literary and scientific societies in all quarters of the civilised world. The Kumar's school education was supplemented by home studies, under the able direction of Mr. P. L. Buckland. The distinguished personality of his father secured to the Kumar recognition, in the shape of autograph letters of congratulation, from several crowned heads of Europe and Asia, on the occasion of his marriage in 1895. Among these were the German Emperor, the Emperor of Austria, the Kings of Sweden, Belgium, and Siam, and the Shah of Persia. He received, as presents on this occasion, a signed photograph and an enamelled rose-water bowl from the King of Siam, and a garland of musk from the Ruler of Nepal. The Shah of Persia bestowed on him the title of "Nawab."

Kumar SHYAMA KUMAR TAGORE.

In 1896, the Shah of Persia appointed him to the honorary office of Vice-Consul for Persia at Calcutta, an office which he was the first Hindu to hold. He was promoted in 1899 to the higher office of Vice-Consul-General, and in 1900 he was appointed Tea Agent for Persia. The Shah also conferred upon him the honour of a Knighthood of the Imperial Order of the Lion and the Sun of Persia. The Kumar takes after his father in his musical studies, of which he is passionately fond. He is a practical musician and an author. He is also a student of more practical matters and, at the request of the Persian Government, he has written a book on Tea. Being a rigid Hindu, like his father, he devotes his leisure to the study and elucidation of the Hindu religion, in its aspects of Vedanta (Monotheism) and Tantra Sastra (which deals with the God-head in the form of Primal Energy). He is the author of a book, "Koúlar Chana Mrita Rahasya," a Tantric compilation for the sect of worshippers known as Viracharis. He has undertaken the compilation of a work named "Sakta Darsan" or the Philosophy of the Sakta form of Religion. The Kumar is a corresponding member of the International Society, Tantric Order, of America.

Professional.

Dr. M. N. BANERJEE, B.A., M.R.C.S., L.S.A. (Lond.), was born at Subarnapore, Nuddea District, Bengal. At the age of ten, after passing the vernacular scholarship examination from the village school, he came to Calcutta to complete his education, for which purpose he attended the Hare School, Presidency College, and St. Xavier's College. From the last named in-

Dr. M. N. BANERJEE.

stitution he graduated in 1877, and accepted the appointment of Lecturer on Chemistry at the Cathedral Mission College. At the same time he continued to attend lectures at the Medical College. During this period he assisted his brother, Pandit Jogendranath Vidyabhushan, in editing "Aryadarsana," a well-known Bengali periodical. He was the author of many articles in that journal. In the year 1880 Dr. Banerjee visited England for the purpose of completing his medical education, and studied at King's College, London, under Lord Lister, Sir George Johnson, and other eminent professors. In 1882 he obtained his medical diplomas and accepted the appointment of Resident Medical Officer at the Royal Free Hospital, where he practised for three years in touch with the best medical men. He also acted as Secretary to the Indian Society, and was associated with the Indian community in London in the presentation of a birthday address to Mr. Gladstone, a reception to Lord Ripon on his return from India, a memorial to Mr. Fawcett, and in other political and social affairs of the day. He returned to Calcutta and commenced practice in 1886, building up a large connection within a short period. During the prevalence of plague he was very active in affording medical aid to sufferers. He never refused his services, and often risked his own life in performing operations on plague patients. He was attacked with plague after one of these operations, but recovered after a hard struggle. An official communication, dated September 18th, 1899, makes special mention of the services which he had "on numerous occasions rendered to Government and to the Medical Officers of the Corporation in connection with the outbreak of plague," and Sir John Woodburn "expressed his sense of the excellent work done and the valuable aid rendered, and conveyed an expression of his hearty appreciation of them." Dr. Banerjee has been Lecturer on Medicine and a Physician at the Albert Victor Hospital for many years. Some of the beds of the hospital are endowed by him and his patients. He induced one of his patients lately to pay more than Rs. 50,000 for the extension of the hospital. Dr. Banerjee also takes great interest, and is always ready with his help, in the education and social improvement of the rural population of his part of the country.

The late JOGENDRA CHANDRA BASU. The career of the late Babu Jogendra Chandra Basu affords an

The late JOGENDRA CHANDRA BASU.

instance of the success of a persistent policy, followed with almost religious devotion. It was the dream of his life to make Bengali journalism up-to-date in every respect, and he was fortunate, inasmuch as he

saw, before his death on the 18th August, 1905, its realization.

Jogendra Chandra Basu was born on the 31st December, 1835, in Ilsara, a village in the Burdwan District, which was the home of his maternal grandfather, while his ancestral house was situate in Berngram on the banks of the Damodar. He belonged to the Kayastha community.

After matriculating from the Hooghly Collegiate School, Jogendra Chandra entered the Hooghly College. But the promise of a successful university career had no charms for him, and his ambition led him into the paths of journalism. He joined the staff of the *Sadharani*, and served his apprenticeship under Babu Akshoy Kumar Sircar, whose name to-day is a household word in Bengal.

Next he came to Calcutta and started the Bengalee weekly, *Bangabasee*. The success of the paper was phenomenal. It created a revolution in Bengalee journalism, imparted to it force and vigour, and in a manner quickened its atrophied veins with the blood of Western journalism. It was the recognised organ of the orthodox Hindu community, and even in far-off Madras civilians, like Mr. Lilly, spoke of it as "the most influential and the most widely circulated of Bengalee journals." The hold it had on the orthodox section of the Hindu community was made manifest when on the introduction of the Age of Consent Bill in the Imperial Legislative Council, numbers responded to its call, and a united voice of protest went up against the proposed Act. It was during the agitation against this Bill that the *Bangabasee* Sedition Case cropped up. Jogendra Chandra was prosecuted on a charge of publishing seditious articles in the *Bangabasee*. But, thanks to the tact of the then Chief Justice, the case was satisfactorily settled.

Jogendra Chandra started a daily paper in Bengalee, but had to abandon it after ten years' struggle. He also started a Hindi edition of the *Bangabasee*, and this journal in the *lingua Franca* of India is the most popular of its kind.

His next work was the publication of the evening paper, the *Telegraph*, the cheapest evening paper in this country. The paper was very popular. But the time is not yet for the success of a pice-paper published in English, and the journal has now, after Jogendra Chandra's death, been converted into a weekly.

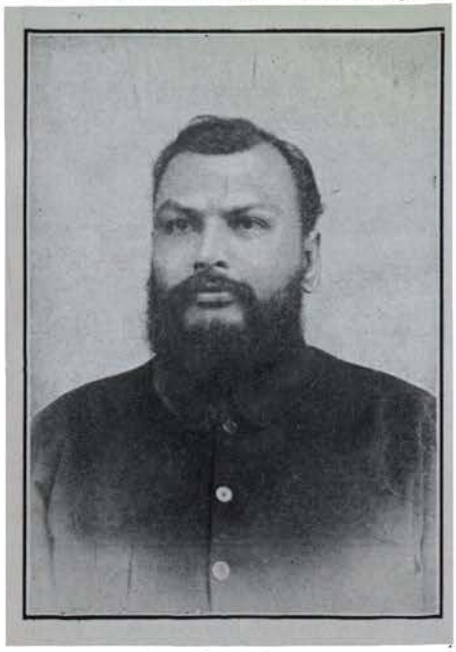
He published almost all the old religious works of the Hindus in the original Sanskrit, as well as in Hindi and Bengalee. And he has earned undying fame by rendering these works popular, and bringing them within the reach of all. He also reprinted the masterpieces of old Bengalee authors.

Jogendra Chandra himself was an author of no mean repute. The *Rajalaksmi*, the *Model Bhagni*, and other sketches of society are in the hands of the Bengalee reading public who appreciate them.

His business capacity was great. The huge publishing business went on smoothly under his guidance.

He was very popular in his own village, in which he made considerable improvements by establishing schools, a post office and a bazaar. He also constructed an embankment and excavated several tanks. He was a man of many virtues as well as of many inventions.

Mr. KALI PODO BOSE, B.A., Pleader, District Courts, Meerut, was born at Sialkot in the Punjab,

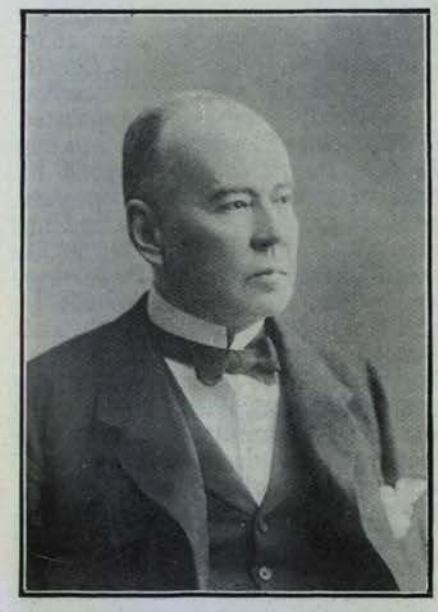


Mr. K. P. Bose.

India, in the year 1858, and received his education principally at the Canning College, Lucknow, where he obtained his B.A. Degree in 1877. For about three years he was a Professor in the Canning College, Lucknow, and the Muir Central College at Allahabad. In 1882, he was appointed Assistant to Colonel Sir George Chesney, then Secretary to the Government of India, Military Department, for a short period, and afterwards went to Allahabad and studied accounts under Mr. Simkinson, Accountant-General of the United Provinces. He next took up law, in 1885, and practised at the District Courts, Meerut. Soon after his arrival at Meerut he was appointed Government Pleader and Public Prosecutor, which appointment he held only for a year; his private practice growing up rapidly and his reputation spreading quickly in all neighbouring districts. Possessing, as he does, an extensive knowledge of the English, Sanskrit, Urdu and Persian languages, his chief aim in life has been to promote education among his countrymen. He founded the Anglo-Vernacular School in the Meerut Cantonments, and also laid the foundation of the Meerut College. He is Honorary Secretary of the Lyall Library and Reading Room, Town Hall, Meerut, which he himself founded; and is also a Trustee of the property left by Nanak Chand, who set aside all his property, worth 40 lacs, for educational and charitable purposes. He has been President of the District Caste Committee. In connection with the Lyall Library, he also started the Jubilee Club (in the Town Hall) which admits all classes as members, its object being to break down the social barriers of the several communities and weld them into one homogeneous whole. His quiet efforts have been continuous to improve and cheapen means of travelling by roads, canals, and railways, and to make the conditions of life more easy for the masses of the people. In postal and telegraph matters, his representations to Government for cheaper rates have already borne fruit, and he is working for the adoption of "pice postage" and of "pie fares." He is very popular among his brethren of the Bar, has often led the Bar Association, and has founded the Law Chambers Company at Meerut, of which he is Managing Director. For his public services he was awarded a seat in the Delhi Coronation Durbar of 1903, and also a Certificate in the name of the King-

Emperor, under the signature of Sir James Digges La Touche, late Lieutenant-Governor of the United Provinces.

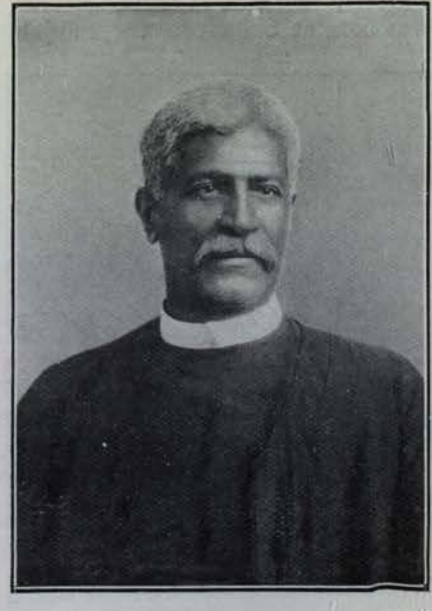
Sir WALTER MYTTON COLVIN, Bar.-at-Law, Allahabad, is the youngest son of the late



Sir W. M. COLVIN.

Hon'ble Mr. J. R. Colvin, Bengal Civil Service, Lieutenant-Governor, North-Western Provinces, who died in the Fort of Agra on the 9th September 1857, during the Indian Mutiny. Sir Walter Colvin was born at Moulmein, Tenasserim, Burma, on the 13th September 1847. He proceeded home for his education and was educated at Monsieur Maclean's School, Lake of Geneva, Windlesham House, Brighton, and afterwards at Rugby and Trinity Hall, Cambridge, where he was a Scholar and LL.B. He was called to the Bar at the Middle Temple in January 1871, and proceeding to India, was enrolled as an Advocate of the Allahabad High Court, where he has practised ever since, having enjoyed a leading practice. In 1892 he was appointed by the Local Government to be a Member of the North-West Provinces Legislative Council, and subsequently was elected a representative of the Allahabad University. He served on the Council for five years, till 1897. When Lord Curzon appointed a Police Commission to enquire into the Police administration, Sir Walter Colvin was appointed to serve thereon as a European non-official member, in which capacity he served for nine months. On the completion of this important service he was, on the 1st January 1904, knighted by the King. Sir Walter Colvin has been a Fellow of the Allahabad University since the year 1892.

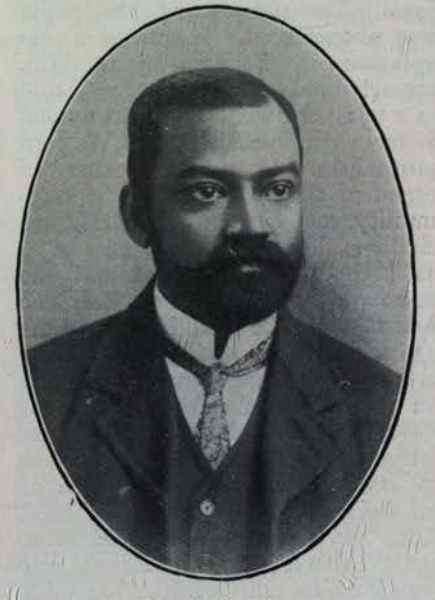
Dr. BEPIN KRISHNA COOMAR, the youngest son of the late Boikuntha Nath Coomar, was born in the family residence at Belur in the District of Howrah in November 1850. After matriculating, he entered the Medical College in 1868. On successfully passing the final examination of his college, he was admitted into the Government service as House Surgeon to the Medical College Hospital, in 1875. He remained in this capacity for over two years, after which he resigned and took to private practice, and since then



Dr. B. K. COOMAR.

has been practising successfully in Calcutta. Both as a physician and a surgeon, he is widely known to his professional brethren for his practical sagacity and keen insight. He was an Honorary Magistrate, and a Municipal Commissioner of the Bally Municipality for several years, and is a life member of the Indian Association for the Cultivation of Science, founded by the late Dr. Mohendra Lall Sircar, M.D., D.L., C.I.E., who was closely related to him. His eldest brother, the late Rajkristo Coomar, was an engineer, being an L.C.E. of the University of Calcutta, and was rewarded for his meritorious services by the Government with the title of Rao Saheb. His elder brother, Pran Krishna Coomar, was a pleader in the Judge's Court at Hughli. His cousin, N. M. Coomar, held an appointment in the Subordinate Executive Service under the Government of Bengal.

Mr. JOGEN CHUNDER DUTT, M.A., B.L., Attorney-at-Law, Calcutta, was born in Calcutta in 1862, and educated at the Presidency



Mr. J. C. DUTT.

College, affiliated to the University of Calcutta where he gained the degrees of Master of Arts and Bachelor of Law. In the examination for the former degree he stood first of his year in English from the Presidency College, and was awarded the University gold medal and prize. In 1892 he was admitted as an Attorney of the High Court of Judicature at Fort William in Bengal, having gained the first place in the Attorneys' Final Examination. Mr. Jogen Chunder Dutt comes from the well-known Christian family of the Dutts of Rambagan in Calcutta.

His father is Mr. Omesh Chunder Dutt, Honorary Presidency Magistrate. His great grandfather, the late Mr. Russomoy Dutt, was the first Indian Judge to be appointed to the Calcutta Court of Small Causes, formerly known as the Court of Requests, and his grandfather, Mr. Koylas Chunder Dutt, was the first Indian Collector of Calcutta. The family are distinguished in the present as in the past. The Indian poetess, Toru Dass, was his cousin, and Mr. Romesh Chunder Dutt, late of the Indian Civil Service and until recently Finance Minister to H. H. the Gaekwar of Baroda, is also a cousin of his. Mr. Jogen Chunder Dutt is an Honorary Presidency Magistrate for Calcutta, and a Fellow of the Calcutta University.

Mr. SHAMUL DHONE DUTT, Solicitor, senior member of the firm of Shamul Dutt & Gupta, is the son of the late Kali Charn Dutt, Zemindar. He was born at Calcutta in the year 1843 and educated at the Hindu College and at the Presidency College. His first articles were to Mr. W. F.

Mr. SHAMUL DHONE DUTT.

Gillanders, but subsequently these were transferred to Babu Roma Nauth Law, of the firm of Swinhoe and Law. Mr. Dutt duly passed his examination in the year 1870 and was enrolled in December of the same year As he had passed before his turn, he had to endure a wait of six months before being enrolled. Mr. Dutt's abilities speedily brought him in business when he commenced to practise on his own account, and for some years he conducted single-handed his growing practice, but later he took into partnership Mr. Nalin Chandra Gupta, who had been his articled clerk. The firm after Mr. Gupta's enrolment became Dutt and Gupta, under which title it is still carried on and has become very prominent in legal circles. Mr. Dutt takes an interest in public affairs and in all matters appertaining to the well-being of his countrymen.

Dr. CHARLES ARTHUR FULLER, M.B. (Lond.), M.R.C.S. (Eng.),

Dr. C. A. FULLER.

L.R.C.P. (Lond.), Cawnpore (Surgeon-Captain, United Provinces Light Horse), was born in Plymouth, Devonshire, in the year 1868, and received his education at the Tavistock Grammar School. From there he went to St. Mary's Hospital where he qualified, obtaining the diplomas of M.R.C.S. (Eng.), and L.R.C.P. (Lond.), in 1892, and in the following year the degree of M.B. (Lond.). At St. Mary's he held the posts of House Physician to Sir William Broadbent, and House Anæsthetist. He was an Assistant Demonstrator of Physiology in the Medical School. He came to India in 1893 as Medical Officer to the Cawnpore Factories, which post he still holds. He is a member of the British Medical Association and Surgeon-Captain in the United Provinces Light Horse.

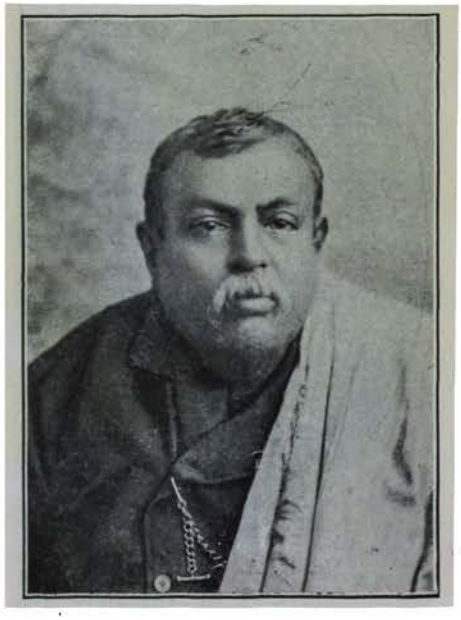
Mr. KAIKHOSRU ADURJEE GHASWALLA, B.A., Barrister-at-Law, Poona, Bombay Presidency, comes of the well-known Parsee family of that name settled in the capital of the Deccan for the last sixty years. He was born at Poona in the year 1869. His early education was received at St. Vincent's School and the Poona Native

Mr. K. A. GHASWALLA.

Institution, and to complete his course he was placed under the Jesuit Fathers at St. Xavier's College, Bombay. Having pursued his studies so far in India, Mr. Ghaswalla then proceeded to England for the purpose of studying Law. He entered at Lincoln's Inn and in due course was called to the Bar, after which he placed himself under Mr. P. B. Abraham, a well-known London lawyer, and obtained valuable experience under him. In the course of the six years, during which he remained in England, Mr. Ghaswalla acquired a valuable professional training in Law and practice in the various legal departments. In the year 1896 he decided to return to India. Arriving here he chose Rangoon as the scene of his first professional practice, and accord-

ingly entered himself as an Advocate of the Chief Court of Burma in the city. He remained in good practice at Rangoon for five years till the death of his father, in 1900, which threw upon him the duties connected with the management of the family estate, and he returned to Poona to carry them out. Settled in Poona he has, ever since, devoted himself to legal practice, in which he has acquired a considerable reputation. He gives part of his time to public affairs, and is a Government nominee for the City Corporation of Poona.

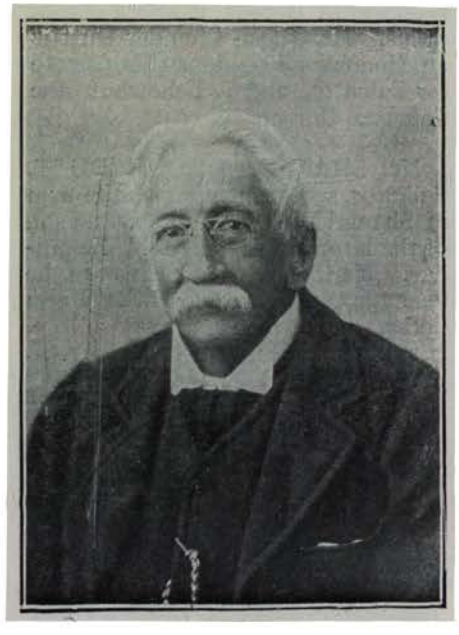
Dr. TRILOKINATH GHOSE, Meerut, was born in September,



Dr. T. N. GHOSE.

1840, at Chinsura, near Calcutta. He comes of a well-known Bengalee family known as the "Ghoses of Chandernagore." His home at Chinsura is known as the "House of the Seven Brothers." He received his education at the Free Church Institution, and passed the Entrance Examination of the Calcutta University with credit. Having secured a scholarship he proceeded to the Calcutta Medical College where he followed the prescribed course of study for five years. Here he gained more than one scholarship and passed out with the degree of L.M.S. In 1867 Dr. Ghose entered Government service and was placed in charge of the Sudder Dispensary at Meerut. Those were days when the natives of India had little faith in Western medical science, but the skill of Dr. Ghose soon wrought a change at Meerut, which was evidenced by increasing attendance for treatment. Dr. Ghose has put in the whole of his Government service at Meerut, where he obtained great local fame as "Dr. Trilokinath" among the natives. In the course of his practice as a surgeon he has performed the greater part of the major operations in surgery. He has obtained the approbation of his superiors, and his name is favourably mentioned in official reports for medical skill and administrative ability. His is a unique record, for he was never transferred during his service; a tribute to the regard in which he was held by Government. During the Russian war panic of 1885, he volunteered for service in the field, and his offer was endorsed by the late Dr. Moir, the Civil Surgeon, who stated that his services would be invaluable, as he was much more experienced in operations than most officers in the Army Medical Service. Dr. Ghose retired from Government service in 1891, and an address was presented to him by the townsfolk of Meerut, praying him to continue practice in their midst; a token of the esteem in which he is held. He has practised in Meerut ever since. As a surgeon and specialist in eye diseases, he has obtained a wide reputation. In the early seventies Dr. Ghose persuaded one of his Bengalee friends to open a druggist's store at Meerut, to ensure a supply of pure drugs. This institution, known as the "New Medical Hall", has flourished, and is now carried on on a large scale. Dr. Ghose is a well-known and highly respected Freemason and has held offices in the Grand Lodge of Bengal. He is secretary of the Cantonment A. V. School, also of the local Hari-Shava and manager of the Durgabai, which institution owes to him the celebrity which its annual solemnisation of the Durga Puja has secured in recent years. Dr. Ghose has gained great reputation for his charity. He dispenses medical aid to the poor without distinction of caste or creed, and his popularity as a consequence is unbounded. Dr. Ghose's door is open to all comers, and his charities are as catholic as they are unostentatious.

Mr. JAMES R. E. GOULDSBURY, Bar.-at-Law, Lahore, Punjab, was born at Sylhet, E. Bengal, in the year 1837, and educated privately. He started life in military service at the age of 17, joining the Lancashire Militia as an Ensign, and went with the regiment to garrison the Ionian Islands in 1855. On the disbandment of the regiment at the conclusion of active operations in 1856, he returned to England and



Mr. JAMES R. E. GOULDSBURY.

sailed for India the same year, *viâ* the Cape, in a ship of 800 tons burden. He arrived in India in the eventful year of 1857, just when the Mutiny broke out. Following his adventurous bent, Mr. Gouldsbury enlisted in the Bengal Yeomanry Cavalry and went through the Oudh Campaigns. On joining the forces under the Command of Brigadier-General Rowcroft, he took a prominent part in those troublous times. The Mutiny over, he served as Extra Assistant Commissioner in several districts of the Punjab, *viz.*, Gugera, Ferozepore, etc., and in 1866, he left the Commission and joined the Chief Court Bar, Lahore, which was established in the same year. Two years later he was commissioned to Chota Nagpur, but did not accept the

appointment. In 1882, he went to England and joined the Middle Temple, where, obtaining a special dispensation of terms, he passed out in 1884, returning to India the same year. In 1901, he again visited England for a short respite and returned in 1902, and has since been practising at the Chief Court, Lahore. Mr. Gouldsbury is the eldest surviving son of the late Francis Gouldsbury, a Civilian of Bengal, who also held the Commissionership of Cuttack and Rajshaye and served for about 38 years. He has been a member of the Masonic craft since 1866, and takes a keen interest in all matters connected with clubs in general. He and Sir William Clark, Chief Judge, are the oldest surviving members of the original Punjab Club of 1863, and their portraits, together with that of Sir Charles Rivaz, late Leiutenant-Governor of the Punjab, are hanging in the new building.

Mr. ARTHUR GREY (*Lieut.-Colonel, Punjab Light Horse*), Bar.-at-Law (Inner Temple), Lahore, Punjab, was born at Trotton, Sussex, England, in the year 1855. He

Mr. ARTHUR GREY.

received his education at Wellington College from 1866 to 1873, and was an open Exhibitioner of New College, Oxford. Having completed his studies, he went to the United States of America, where he remained for about eight years, chiefly connected with the Press. He returned to England in 1885, and was called to the Bar the following year. He then became, and is still, a member of the North-Eastern Circuit. He came to India in 1887, and practised at Bombay for over a year, where amongst other things he founded the Bombay Art Society. Compelled by failing health, he left Bombay for Lahore in 1889 and started practice in the Chief Court of the Punjab. His ability soon secured him a leading position at the Bar, of which he has been the generally acknowledged leader since Sir William Rattigan's retirement. He has been for several years President of the Bar Association. He is Commandant of the Punjab Light Horse, which he himself organised in 1893, and is on the Sub-Council of the United Service Institution. Colonel Grey is well-known as a Freemason, and is Grand Superintendent of the Royal Arch, as well as District Grand Master in the Punjab. Lodge Grey, of which he was the first Master, was named after him. He is also the Senior Permanent Trustee of the Punjab Masonic Institution. He owns a large tea estate in Kangra, consisting of about 1,600 acres, and is a member of the Tea Cess Committee. He was one of the principals who obtained a concession for the Delhi Durbar Electric Tramway Lighting Company, and he takes a great interest in electric enterprises generally. At the Delhi Durbar he commanded a composite regiment of Volunteer Cavalry, which formed the escort of H. E. the Commander-in-Chief. He is a keen sportsman, but his partiality lies chiefly towards motoring. Colonel Grey is the eldest son of the late Colonel Francis D. Grey, who commanded the 39th (Hampshire) Regiment. His grandfather was Bishop of Hereford, and he is a grandson of the first Earl Grey.

Mr. J. H. LEE-HORWOOD was born in Bendigo, Victoria, Australia, in 1862, educated at Horton College, Tasmania, and Scotch College, Melbourne; took the degree, with honours, of Master of Civil Engineering, Melbourne University, in 1883, and joined the Institution of Civil Engineers, London. Between his College and University periods Mr. Lee-Horwood devoted three years to mechanical engineering.

Mr. J. H. LEE-HORWOOD.

Bridge designing and general railway work for the Tasmanian and Victorian Government Railways filled in the next 3½ years. Having resigned his appointment with the Victorian Government Railways in April 1886, he joined Millar Bros., Railway Contractors, as Engineer, on the construction of the Dimboola-Servicetown Railway, 60 miles in length.

On completion of the Dimboola Railway, Mr. Lee-Horwood was appointed Engineer-in-charge for the construction of the Albany-Beverley Railway. After completing 100 miles of this line, and owing to an accident necessitating a sedentary life, Mr. Lee-Horwood was appointed, from among 34 candidates, to the Chair of Professor of Engineering and Surveying at the Ballarat School of Mines, which position he occupied for over five years; when he again resumed the active pursuit of his profession as General Manager and Engineer-in-charge of the Northam-Southern Cross Railway, West Australia, 170 miles in length, and on completion of the construction, took charge of the running of the traffic; an important feature of the above contract

was the construction of four large reservoirs.

A successful private practice for four years on Coolgardie and Kalgoorlie gold-fields completed his career up to 1899. On these gold-fields Mr. Lee-Horwood carried out the construction of a portion of the Coolgardie Railway, the Coolgardie Reservoir, the preliminary work of the Menzies Water Supply scheme, Kurmalpi Water Supply scheme, Coolgardie-Hampton Plains Tramway, and supply and erection of a large number of mining plants. He also conducted an extensive practice as Mining Engineer and Surveyor, reporting on mines for various London Companies.

During two years of his residence in West Australia Mr. Lee-Horwood held the position of Chairman to the Board of Examiners for Engineers under the West Australian Government. On completing a six months' tour through the United Kingdom and the Continent in the latter half of 1899, at the end of that year he left London for India, as representative of Millar's Karri and Jarrah Company (1902), Limited.

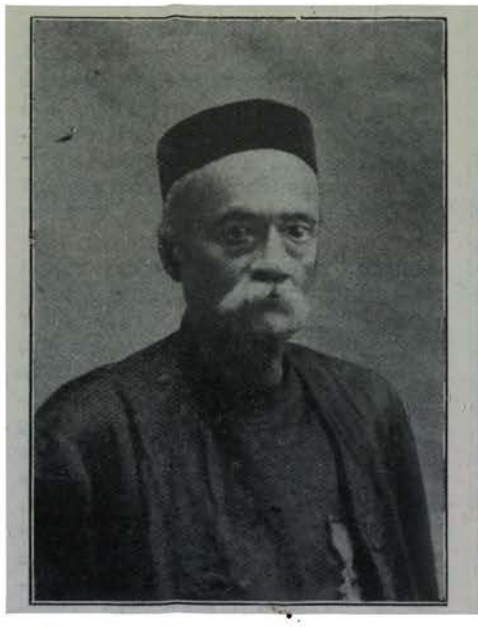
For fifteen months during 1902-1903, Mr. Lee-Horwood served as Municipal Engineer to the Municipality of Lahore, Punjab, under the Public Works Department of India, and obtained sanction from the Government of India for the execution of several large schemes for the improvement of the sewerage system, water supply, and conservancy tramway for the City and Cantonment of Lahore.

Mr. Lee-Horwood's resignation from the Public Works Department was at first refused, but on the recommendation of the Sanitary Commissioner for the Punjab and the Deputy Commissioner of Lahore, a five years' agreement was offered to him; this, however, was again refused, and Mr. Lee-Horwood reverted to his appointment with Messrs. Millar's Karri and Jarrah Company (1902), Limited.

Mr. Lee-Horwood holds the following Australian diplomas:—M. C. E. (Master of Civil Engineering); Authorized Government Mining Surveyor; Authorized Government Land Surveyor; Authorized Municipal Engineer.

Mr. KALI NATH MITTER, C.I.E., Solicitor and Vakil of the High Court, belongs to a Kulin Kayastha family. He was educated at the Hindu School and Presidency College, and after finishing his education became articled to the late Mr. E. H. Sims, Solicitor, Calcutta. He was enrolled as an attorney in July 1868 and entered into partnership with Mr. Sims, with whom he continued until 1873, when he began to practise on his own account. He was admitted as a Vakil of the High Court on the 27th July 1872.

In 1893 he was joined in his practice by Babu Deva Prasad Sarbadhikary, M.A., B.L., and they have continued together since under



Mr. KALI NATH MITTE, C.I.E.

the name of Messrs. Kali Nath Mitter and Sarbadhikary. He is a member of the British Indian Association, of which he has been elected as one of the Vice-Presidents, and was for 23 years an elected Municipal Commissioner of Calcutta, in which capacity he took an active and prominent part in the settlement of most of the momentous matters which were brought up for discussion during that period. He with several others, owing to some misunderstanding with the Local Government, resigned his seat in the Corporation. While a Municipal Commissioner he was appointed by Government to serve on committees appointed to consider the desirability of the introduction of the Octroi system, and that of the amalgamation of some portion of the suburban area with the town area, and in consequence of his intimate knowledge of Municipal affairs, Sir Rivers Thompson nominated him as a Member of the Legislative Council of Bengal, in which capacity he served for two years, during which period the Municipal Act of 1888 was passed. He was one of the joint Secretaries of the Albert Victor Permanent Memorial Fund which was made over to the Government and became the nucleus of the Albert Victor Hospital at Belgatchia, and he has recently been appointed by Government as a member of the Committee for organising a paying Ward in the Medical College Hospital for the benefit of the Indian public. He is also a governor of the Bhagawan Dass Bogla Marwari Hospital. Sir Alexander Mackenzie, the Lieutenant-Governor of Bengal, appointed him a Member of the Calcutta Building Commission under the presidency of the Hon'ble Mr. Justice Trevelyan, as a result of the labours of which Commission the existing Municipal Act, so far as the Building Regulations are concerned, was passed. He has been a Presidency Magistrate for many years and is a leading member of the Kayastha Sabha which makes social reform on strictly Hindu lines its object.

For his various and meritorious services he received the decoration of C.I.E. in 1901.

Mr. FRANCIS WILLIAM MOORE, Barrister-at-Law, Meerut, was born in 1864, at Agra, and educated at St. Paul's School, Darjeeling. On the completion of his school course, Mr. Moore joined the service of Government in the Survey Department, in which he served for six or seven years. In the year 1890 he resigned Government service and subsequently proceeded to England, where he entered himself at Middle Temple, and in due course was called to the Bar. He then returned to India and commenced practice at Agra, where he remained till the year 1899. In 1900 he removed to Meerut, in which city he has been practising

ever since. Mr. Moore is a member of the Bar Association in Meerut,

Mr. FRANCIS W. MOORE.

and has acted as President of the Association for three years.

Mr. SYED ALAY NABI, B.A., Vakil of the High Court, United

Mr. SYED ALAY NABI.

Provinces, was born at Agra in the year 1875. He was educated at St. John's College, Agra, from whence he took his degree as Bachelor of Arts in 1896. He commenced practice in the year 1901. Mr. S. A. Nabi is the Vice-President of the Agra Municipality, to which office he was appointed in April, 1906.

Mr. ERNEST AUGUSTUS NEWTON, Pleader, High Court, United Provinces, was born on the 12th March, 1848, at Clare, Suffolk, and was educated at Norland College, London. He is the son of the late Thomas Newton, Bar.-at-Law, who was an Advocate of the N.-W. P. High Court, with an extensive practice in Northern India and the Punjab, and who became famous as the Advocate of the Begum Sumroo in her Arms' suit against Government. He was also engaged in the great suit of Raja Rumben Sing of Landoura, the Indian "Tichborne Case." On his death in 1875, Mr. Ernest Newton, the subject of the present sketch, declined to continue the advocacy of this case, not believing in its truth. Mr. Ernest Newton took collegiate honours in English and Mathematics, and carried off the Natural Science medal, and honours in Natural History, Chemistry, Drawing, and French at the College of Preceptors, London. He is a member of that Society to the present day. He matriculated at the London University and joined Gray's Inn with a view to being called to the Bar. Domestic complications, however, prevented his completing his legal course. He came out to India in 1868 and joined his father's office and eventually passed the High Court Pleaders' Examination in which he was placed "first with credit." He was enrolled a Pleader of the North-Western Provinces High Court in August 1874. He has practised in that Court, and Courts subordinate to it, ever since. He commenced practice in Dehra Dun, where he secured the appointment of Government Pleader, and soon acquired an extensive civil practice. In the year 1883, he removed to Meerut where he has ever since practised almost continuously. He has made a reputation for fearless independence as a criminal lawyer. He is now the senior member of the local Bar and one of the oldest members of the High Court Bar of the United Provinces.

Mr. Newton was offered an appointment as Magistrate in the Statutory Civil Service by Sir Auckland Colvin, late Lieutenant-Governor of the then North-Western Provinces, on the recommendation of the late Sir John Edge and Sir Douglas Straight, Chief Justice, and Puisne Judge, respectively, of the Allahabad High Court; but he declined the appointment as the emoluments were not sufficient to induce him to abandon his very extensive and lucrative practice. Within the last few years Mr. Newton has received Rs. 8,500 from Government for a plot of ground which he purchased from Government for the sum of Rs. 80 only.

Mr. E. NEWTON.

On this land he had built an office which cost him under a thousand rupees, a portion of which he let out, receiving for the same about Rs. 5,000 as rent. Mr. Newton is a well-known Freemason. He is the oldest Past Master of Lodge "Hope", Meerut, and a Past District Grand Warden in the English constitution.

He is the oldest Past Master of Lodge "Caledonia," and a Past Grand Senior Warden of the Scotch Constitution, and a Past Warden of Lodge "Charity" of the Irish Constitution.

He is a Past District Grand Senior Warden of The Mark Lodge and a Past Master and Honorary Member of Mark Lodge "Voussoir," Meerut.

He is a Past District Grand Principal "H." of the District Grand Chapter of Royal Arch Masons and a Past "Z." of Chapter Prinsep, Meerut.

He is a Past Preceptor of the "Duke of Connaught and Strathearn" Preceptory of Knights Templar and Knights of Malta.

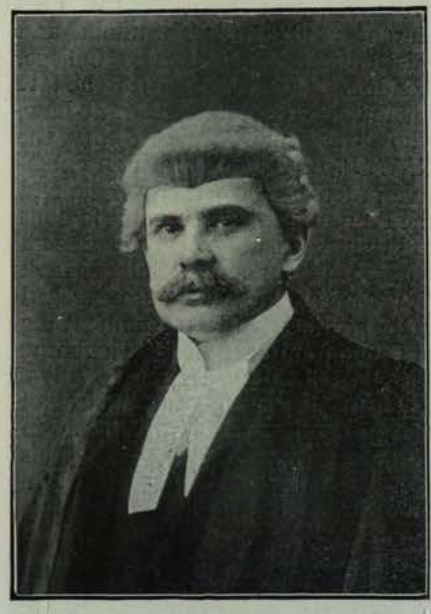
He is a Past Most Wise Sovereign of the Duke of Connaught and Strathearn Rose Croix Chapter.

Mr. BRIAN EDWARD O'CONOR, Barrister-at-Law, Allahabad. Mr. O'Conor is the only son of Mr. J. E. O'Conor, C.I.E., late Director-General of Statistics for India. He was born at Calcutta in the year 1869 and was educated at Dublin, where he graduated in 1892. He read for the Bar and was called at the King's Inns in the same year. On his arrival in India in 1893 he was enrolled as an Advocate of the

Mr. B. E. O'Conor.

Allahabad High Court. He has a large practice in Allahabad, and is Honorary Secretary of the High Court Bar Association at Allahabad.

Mr. CHARLES HORMAN OERTEL (*Captain, 1st Punjab Volunteer Rifles*), Barrister-at-Law of Lahore, Punjab, is an Advocate of the High Court of Allahabad and of the Chief Court of the Punjab. He was educated partly on the Continent and partly in London, joined Lincoln's Inn in 1883, and was called to the Bar in 1886. For a time Mr. Oertel practised in London, and shared chambers in Princess Court Temple with Mr. Harmsworth, Barrister-at-Law, and father of the



Mr. C. H. Oertel.

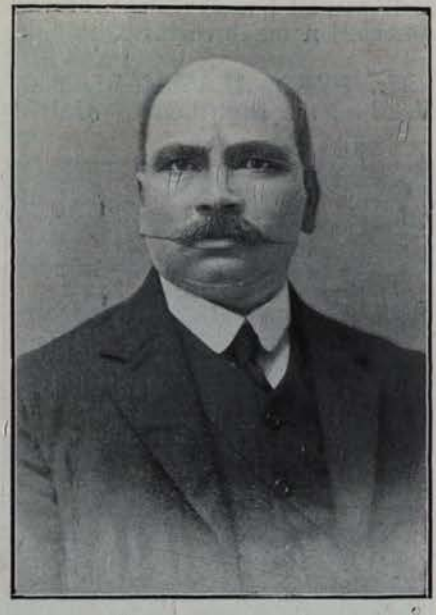
present Lord Harmsworth, of newspaper fame. He came to India in 1888 and joined the Legislative Department of the Government of India as Special Assistant Secretary. In the following year he acted as Deputy Secretary in the same Department, but he resigned the service towards the end of that year and joined the Lahore Bar. He has been practising at the Chief Court ever since.

Under the auspices of the Government of India, Mr. Oertel has compiled several works on law, and he is the author, *inter alia*, of the "Burma Code" and the "Punjab Code."

Besides having a leading practice at the Bar Mr. Oertel takes a keen interest in industrial and commercial undertakings. He is the founder and Managing Director of the Himalaya Glass Works, Limited, situated at Rajpur near Dehra Dun, practically the pioneer Glass Works in India. He is also a Director of the Kashmir Mineral Company, Limited.

As a Mason he has passed through the Chair of Master of Lodge Hope and Perseverance and is a P. D. G. Registrar. He is a Captain of the 1st Punjab Volunteer Rifles and Honorary Treasurer of the Chief Court, Bar Association.

Dr. CHARLES ARTHUR OWEN, M.D., F.R.C.S. (Edin.), L.R.C.P. (Lond.), M.R.C.S. (Eng.), late Civil Surgeon, Shahpur, was born at Bangalore in 1861, and educated at La Martinière College, Lucknow. He entered the Indian Subordinate Medical Service in 1876, and after a preliminary medical training was attached to the Medical College, Calcutta, for a three years' course of training. He was then posted to military duty, in which he remained for the next ten years. In 1889, he obtained a year's leave and proceeded to England, where he qualified and obtained the degree of L.R.C.P. (Lond.), M.R.C.S. (Eng.). During this period he also competed for the Indian Medical Service and



Dr. C. A. Owen.

passed the necessary examination, but received no appointment owing to the lack of vacancies. On his return to India, he was transferred to the Civil Department and appointed Lecturer on Pharmacy at the Lahore Medical College. In 1894, he was transferred to Simla, in charge of the clerical establish-

ment, where he remained till 1896 when he returned to Lahore as Assistant Civil Surgeon. Prior to this he officiated for three months as Civil Surgeon, Lyallpur, in 1893. In 1900, he again visited Europe and qualified as M.D. (Brux.) with honours, and F.R.C.S. (Edin.) by examination; and on returning to India he reverted to his previous appointment. He was transferred as Civil Surgeon to Shahpur in 1906, and this was his last appointment prior to going on 15 months' leave. Dr. Owen is Medical Referee of the Presbyterian Life Assurance Fund, and Medical Examiner to several Life Assurance Companies. He is Past Master, local English Lodge "Hope and Perseverance" and has taken other high degrees in Freemasonry, in which he takes a keen interest. Dr. Owen is the eldest son of Arthur Owen, the blind Indian Mutiny veteran, who was singled out by Lord Curzon at the Delhi Coronation Durbar. Dr. Owen is about to retire from the service, and has resumed his professional work at his present residence, Hall Road, Lahore.

Babu SATISH CHANDRA PAL-CHOWDHURY, Attorney-at-Law, Calcutta High Court, is the second son of the late Babu Prosonna Gopal Pal-Chowdhury, and was born in 1868. He comes of the celebrated Pal-Chowdhury family of Ranaghat, in Nadia, Bengal, which was founded by the brothers, Krishna Chandra (Panti) Pal-Chowdhury and Sumbhoo Chandra (Panti) Pal-Chowdhury, who were born nearly 150 years ago. Krishna Pal was the architect of his own fortune, and from very humble beginnings he rose to the position of a merchant prince, amassing by trade a colossal fortune. He invested vast sums of money in the purchase of zemindaries. He was distinguished for his liberality. The then Governor-General of India, the Marquis of Hastings, offered to confer upon him the title of "Rajah," but Krishna Pal was naturally of a simple and modest disposition and preferred to retain the title of Chowdhury already bestowed upon him. His Excellency accordingly conferred on him the title of "Pal-Chowdhury" by which the members of the family are known to this day. The traditions of the family were carried on by Krishna Pal's descendants and the family possessions were still further added to and enhanced in importance, and the Pal-Chowdhurys established themselves in a very prominent position in Bengal. The fortunes of the family, however, suffered in the great law suit which lasted in the old Supreme Court of Calcutta for nearly 50 years, covering three generations of the family. This cost them huge sums of money and resulted in the loss of many of their valuable estates. The suit came to an end in the time of the brothers Sree Gopal and Prosonno Gopal, great grandsons of Sumbhoo Chandra. In recent years the most prominent member of the Pal-Chowdhurys was the late Babu Surendra Nath, first cousin of Babu Satish Chandra, the subject of the present sketch. In his time H. E. the Marquis of Ripon, when Viceroy of India, and Sir Rivers Thompson, the then Lieutenant-Governor of Bengal, visited Ranaghat and were good enough to accept the hospitality of the family, who have been similarly honoured by many other high Government officials from time to time. The Pal-Chowdhurys are still a distinguished family and are considered as almost next in rank to the Maharaja of Krishnagar in the district of Nadia.

Babu SATISH CHANDRA PAL-CHOWDHURY.

The family have always been distinguished for public spirit, charity, and marked loyalty to Government, and have been privileged in consequence to enjoy the esteem and confidence of the authorities.

Babu Satish Chandra Pal-Chowdhury had the misfortune to lose his father in October, 1874, when he was only 7 years of age. He was brought up by his mother until he reached the age of 19, when she too, unhappily, died. He then passed under the care of near relatives. He first prosecuted his studies at school in his native town, and matriculated from the Calcutta Hindu School. He continued his education at the G. A. College and the Presidency College, Calcutta. He graduated in due course from the Calcutta University and entered upon his articles to the late Mr. A. St. J. Carruthers, the well-known Calcutta solicitor, in 1893. He was in due course admitted as an Attorney of the Calcutta High Court on 1st December, 1899, and since then has practised as such, leaving the management of the family estate to the resident members of the family. On the 12th March, 1884, he married into the family of the Dey-Chowdhurys of Ranaghat, but has no issue.

Dr. F. F. LANYON PENNO, M.R.C.S., L.R.C.P., and L.S.A., Bombay, was born in Ordnance Island, St. George's, Bermuda, and is the son of the late Major-General William Lanyon Penno, Ordnance Department, England. He received his education privately at Devonport and Stoke Grammar School under the two celebrated Jonases, and at Devonport House under Mr. Langdon. He began his medical career, against much opposition, at Rochester Hospital, Rochester, under Dr. Nankivell, and subsequently, of his own choice, went to London to University College Hospital, Gower Street, where he obtained his surgical and medical knowledge under the great surgeons and medical men of the day. On leaving the hospital, Mr. Berkley Hill, the Dean, wrote of Dr. Penno that he would be able to conduct a large practice to the satisfaction of his patients and himself. Dr. Penno, in 1888, decided to select India as his field of operations, and he first

worked among the Planters in South Coorg until, after two and a half years, he started in Bangalore as a private practitioner. He was the first Englishman to set up a private practice there, all the posts having

Dr. F. F. Lanyon Penno.

hitherto been held by Government medical men. In spite of opposition, the Doctor built up a large and extensive practice, and won the esteem and regard of the population, more especially of the Hindus and Mahomedans. The late Maharaja of Mysore (Rama Chandra Woodiyar) was his personal friend, and desired him as his private physician, an appointment of which the ruling powers disapproved. He has had many patients amongst Indian Princes. In 1903 he decided to remove to Bombay, a larger city and more suited to his capabilities. Here he was eminently successful, and the Government did not oppose his successful treatment of The Maharaj Kumar of Sirohi. The Doctor has been a great success since, and his musical talents have assisted largely in winning him many friends.

Dr. Penno's work in the parishes of All Saints', St. Matthew's and St. Mark's, Bangalore, have on many occasions been referred to in the local press and in the Madras Diocesan Record of 1901. His work at the Bangalore Cantonment Orphanage was officially noticed as thorough, constant, and searching. He was Municipal Commissioner of the High Ground section in the City of Bangalore, and his minute on the approaching great plague is still extant, although pigeon-holed at the time, until too late. He is well connected, and many of the members of his family hold high offices in the Army, Navy, and Church.

Kaviraj NAGENDRA NATH SEN is the fifth and youngest son of Kaviraj Rajkissore Sen, and was born in the year 1865, at Kalna, in the District of Burdwan, in Bengal. He was educated at the Hindu School, Calcutta, an institution which has gained the reputation among Indians of being the Eton of Bengal. The early bent of his mind was towards the study of the Hindu systems of medicine, the healing art being the hereditary profession of the ancient family from which he comes, the Kavirajes of Kalna. The young man, however, decided first to apply himself to the medical science of Europe, and to this end entered himself as a student of the Campbell Medical School, Calcutta. Here he carried his studies to a successful termination, and obtained with credit a diploma at the final examination. This success was a preliminary to a regular course of study in Ayurvedic medicine. The young man had been from his earliest years in touch with the Hindu system of pharmacy, and was familiar with all descriptions of herbs and substances used for remedies by the Hindu physicians, and had also obtained skill in the compounding of potions. His studies, which he was in an excellent position to pursue, having relations who were skilled physicians in the Indian methods, now carried him further. His proficiency in European medicine was of the greatest value to him in prosecuting the more ancient system of his own country. It was due to the enlightened mind of his elder brother, Kaviraj Benode Lal Sen, that the young Nagendra was given the opportunity of prosecuting his studies in both systems of the East and West. Kaviraj Benode Lal anticipated the happiest results from these studies, in which the knowledge derived from the East and from the West was combined, and in this the event justi-

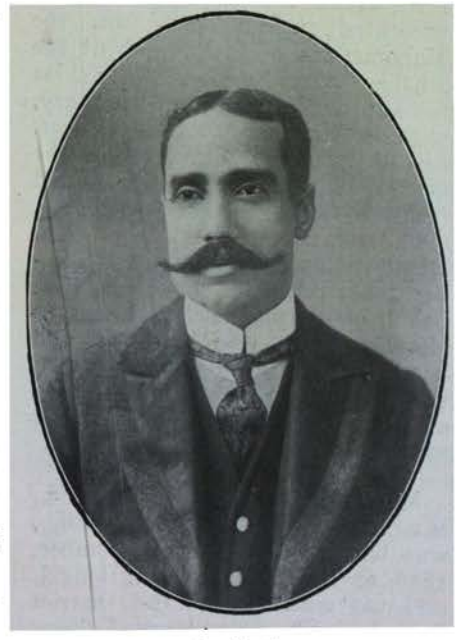
The Dispensary.

fied his expectations, for Kaviraj Nagendra Nath has acquired a great name in his profession. As a consequence of the dual nature of his qualifications, the name of Kaviraj Nagendra Nath is well known in Europe, as well as to his own countrymen in India. He has been elected a Member of the Surgical Aid Society of London, the Chemical Society of Paris, and the Society of Chemical Industry, London, and is the first Indian gentleman who has obtained this triple honour. The Kaviraj has done much towards raising the status of Hindu medicine in the estimation of the world. Endowed with a practical mind, and well equipped

Kaviraj N. N. Sen.

with Western knowledge, he has been enabled to put forth, in a manner acceptable to Western scientific men, the principles and practice of his ancestral art. To this end he has published a work entitled "Hindu System of Medicine," which has attracted attention among English physicians. All previous attempts to translate the Sanskrit work in medicine had been but fragmentary, and no skilled physician among the Hindus had arisen sufficiently acquainted with Western systems to act as an interpreter. The Kaviraj's book is systematic and comprehensive, and of great value to the student of whatever nationality. Among his own countrymen, Kaviraj Nagendra Nath has acquired great reputation as a successful physician, and his fame extends as far as Ceylon. The illustration given on page 234 shows the palatial premises of the Kaviraj at Nos. 18-1 and 19, Lower Chitpur Road, Calcutta, which is a landmark of the revival of Ayurvedic science. Attached to the establishment is a well-arranged Dispensary, where the Kaviraj treats the ailments of the thousands of rich and poor who flock to him. Among the Hindus, he is venerated as an embodiment of the ancient lore of the Reshis or Sages of India, which his modern researches enable him to translate for the use of the present day. Besides attaining great celebrity as a practitioner, the Kaviraj has contributed very largely to current literature, being the author of many works in the vernacular on the theory and practice of medicine. Among other publications, he is the author of "Kaviraji Siksha," "Daktari-Siksha," "Baidyak Siksha," "Sucrut-Sanhitia," "Rogi Charyyar," "Drabyagun-Siksha," etc. To crown his other works, the Kaviraj has a reputation as an extremely charitable man in his treatment of his poorer patients.

Mr. MIAN MUHAMMAD SHAFI, Bar.-at-Law (of the well-known Mian family of Baghbanpura), Lahore, Punjab, was born at Baghbanpura on 10th March, 1869, and received his education principally at the Government and Forman Christian Colleges, Lahore. He proceeded to England in 1889 to study for the Bar, and entered the Middle Temple. While in England he had the honour of a presentation at a levee held by the late Queen-Empress. He was Vice-President of the Anjuman-i-Islamia, a member of the Paddington Parliament, and the National Indian Association, and often took part in the discussions of the Society of Arts and the East Indian Association. He took an active part in the General Election of 1892, and addressed many meetings in the Unionist interest. He distinguished himself at the Middle Temple by winning a scholarship in International and Constitutional Law, and was finally called to the Bar in 1892. Returning to India the same year he started practice at Hoshiarpur, and remained there for two-and-a-half years. While at Hoshiarpur he founded the local Anjuman-i-Islamia, acting himself as Secretary. In 1895 he moved to Lahore and started practice at the Chief Court, and has by dint of hard work and conscientious discharge of his professional duties secured a place in the front rank of the Bar. He has written commentaries on "The Punjab Tenancy Act, 1887" and "The Provincial Small Cause Courts, 1887," and is the author of the "Law of Compensation for Improvements in British India." He has also written a series of articles on "The Punjab Land Alienation Bill" and "The



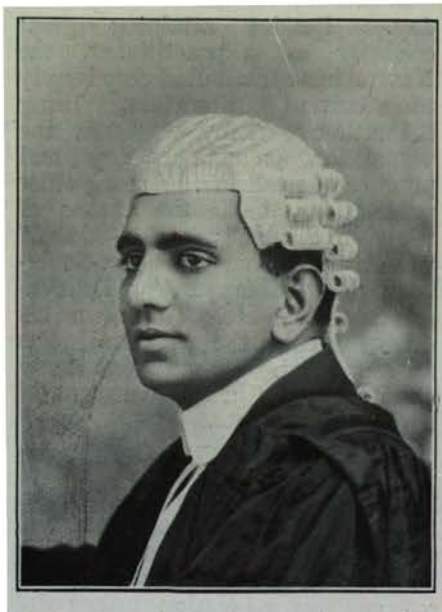
Mr. M. M. Shafi.

Punjab Pre-emption Bill" and other legislative measures relating to the Punjab. He takes a keen interest in the cause of education, male as well as female, and has made handsome donations to various educational institutions in Lahore. He is a Fellow of the Punjab University, Chairman of the Islamia College Committee, Fellow and Member of the Executive Committee of the Punjab Association, and one of the Secretaries of the Victoria May Girls' High School Committee. The present stability and prosperity of the Islamia College is, in a great measure due to his indefatigable exertions.

Since his return from England, he has been taking keen interest in the promotion of the welfare of the Mahomedan, as well as the agricultural communities. He is the General Secretary of the Zemindars' Association, Lahore; Vice-President of the Young Men's Mahomedan Association; a member of the Executive Committee of the Anjuman-i-Islamia, Punjab; a member of the General Council and Executive Committee of the Anjuman-i-Himayat-i-Islam, Lahore; and Vice-President of the Young Men's Indian Association. On the occasion of the celebration of the Diamond Jubilee of Her Majesty the late Queen Victoria, he was a member of the deputation which presented the address of the Mahomedans of the Punjab at the Durbar held by Lord Elgin at Simla; and was Joint-Secretary, with the Registrar of the Chief Court, of the Executive Committee of the Queen Victoria Memorial Fund (Punjab Branch). He was also a member of the All-India Mahomedan Deputation which, on the 1st October 1906, presented a memorial on behalf of the Indian Musalmans to His Excellency the Viceroy; and has been elected by the members of the Anjuman-i-Behleud-i-Musalman of Dehli as the patron of that association.

Major N. P. SINHA, I.M.S., M.R.C.P., Lond., M.R.C.S., Eng., was born on the 30th September, 1858, at Raipur, Birbhum, Bengal, and was educated at the District School, and Presidency College, Calcutta. He entered for his medical course at the Medical College Hospital, Calcutta, and proceeded to England to pursue his studies at University College, and King's College, London. He entered the Indian Medical Service in 1886, and was in military employ until 1890 when he was permanently transferred to civil employ. His war services were with the Burmese Expedition, Tirah Expedition and Chinese Expedition. Major Sinha was specially mentioned as Registrar of General Hospitals in the Tirah Expedition and again as a Principal Medical Officer in the Chinese Expedition. He was appointed to act as first class Civil Surgeon in 1904, before retirement.

Mr. RICHARD KAIKHUSROO SORABJI, Bar.-at-Law, Allahabad, was born at Belgaum, Bombay, in the year 1872. His education was commenced in Poona. He was then sent to England and placed in school at Ramsgate. After his school career he proceeded to Balliol College, Oxford, from which College he graduated with honours in 1893. He proceeded to London and read for the Bar. Being called, he returned to India and was enrolled an advocate of the High Court, Allahabad, in the year 1897. In the year 1902 Mr. Sorabji was appointed Professor



Mr. R. K. SORABJI.

of Law at the Muir Central College. In private life Mr. Sorabji devotes himself largely to philanthropy, with a special care for children in whom he takes a great interest. One of his chief pleasures is to organize entertainments for boys and girls who have not the opportunity of going to the hills. His Honour the Lieutenant-Governor has aided Mr. Sorabji in his efforts by lending Government grounds for the purpose of fêtes, etc. Frequently, as many as seven or eight hundred of the little ones gather at the entertainments he organizes; and that instruction may be combined with pleasure, the programmes include competitions in various useful arts, for which prizes are given.

The Hon'ble Rai SRI RAM, Bahadur, C.I.E., Lucknow, who is the acknowledged leader of the Indian section of the Oudh Bar, was born at Lucknow in 1854. He belongs to an old and respected family, members of which have held high offices under the Kings of Delhi and the Nawabs of Oudh. After having received a good education in the vernacular and Persian at home, he joined the Canning College where he showed a remarkable aptitude for acquiring knowledge, and in a short time became a favourite pupil of his teachers and professors. In every class, from the lowest to the highest, he was the recipient of prizes and scholarships. He obtained the degrees of B.A. (1875), M.A. in Sanskrit (1876), and B.L. (1877), from the Calcutta University. He joined the Bar at Lucknow, and shortly after he passed the Vakils' Examination of the N.-W. P. High Court, standing first in the list of successful candidates. Although in 1879 he was appointed by the Government of the North-Western Provinces and Oudh as an Extra Assistant Commissioner, he continued

RAI SRI RAM, BAHADUR.

to practise as a vakil. He held the appointment of Public Prosecutor and Government Pleader for Oudh from 1884 to 1896 and filled it with credit. His knowledge of law is

profound and he can grasp the intricacies of a case quickly and accurately. He is a hard worker, and his industry and ability have secured for him a commanding position at the Bar.

Notwithstanding his large and extensive professional business he is able to find time to devote to the service of his country, and is well known for his public-spirited labours. He has been a member of the Lucknow Municipal Board since 1884, and its Vice-Chairman since 1889. His work on that Board is much appreciated, alike by the people and by Government. In 1893 he was made a Rai Bahadur, and in 1900 Her Majesty the late Queen Victoria bestowed upon him the Kaisar-i-Hind Gold Medal for public services in India. For his meritorious services during the famine of 1896-97, a certificate of honour was presented to him by His Honour Sir Antony MacDonnell, at a Durbar held in Lucknow.

In the year 1893 Rai Sri Ram was appointed a Member of the Lieutenant-Governor's Council, representing the Lucknow group of Municipal Boards, and he continues to hold this position. In the years 1900, 1902, and 1904, he was nominated a Member of His Excellency the Viceroy's Legislative Council, and served in that capacity till October 1906. His services on that Council have been valuable to his constituents and appreciated by Government, who conferred upon him a C. I. E. in 1906.

Rai Sri Ram was a Fellow of the Allahabad University from 1894 to 1904 and has always displayed an interest in educational matters. He is a member on a large number of committees of public institutions and is an honorary magistrate. He has devoted himself also to charitable works, and built and endowed the "Sri Ram Hospital," a first class dispensary for outdoor and indoor patients at Ajodhya, at his own expense.

On the death of his father, Dewan Mewa Ram, he succeeded to the Taluqa of Rasulpur in the district of Fyzabad, Oudh, succession to which is regulated by the rule of primogeniture.

Messrs. UNWALLA & PEEROZSHAW, Solicitors and Notaries Public, 48, Meadows Street, Bombay. Partners:—Messrs. Ardeshir Framjee Unwalla and N. Feerozshaw Dubash. This firm was originally started by Mr. Unwalla in the year 1900, in which year Mr. Peerozshaw joined him. Mr. Ardeshir Framjee Unwalla, senior partner, was born in Bombay in the year 1864, and was educated in the Elphinstone College. In the year 1882, he obtained his degree of Bachelor of Arts of the Bombay University. Soon after, he got himself articled to Mr. R. S. Brown, one of the most prominent and leading Solicitors of Bombay at that time. Mr. Unwalla passed out as a Solicitor in the year 1890. In his college days he was a well-known amateur actor and took part in several Shakesperian and other plays performed by the "Amateur Dramatic Club." He has been

Mr. A. F. Unwalla.

practising as a Solicitor for the last 17 years and commands a good practice. He has also been a Member of the Municipal Corporation of Bombay for nearly 15 years, and is at present a nominee of Government on that body.

Educational.

AGRA COLLEGE, Agra. In 1818, Ganga Dhar Shastri bequeathed to the East India Company the rents of certain lands in the districts of Aligarh and Muttra, for the promotion of education. In accordance with the Shastri's Will, Agra College was opened in 1823, the endowments then yielding upwards of Rs. 22,000 a year. Susbequently, Government added to the income and raised the College to its present status. In 1883 the management was transferred to a Board of Trustees. The College now receives annual grants of Rs. 12,000 from Government and Rs. 2,500 from the Municipality of Agra, in addition to the original endowments. At the time of the transfer the Trustees made an appeal to the noblemen and gentlemen of the Province of Agra, and a lakh of rupees was added to the endowments, while the capital of the scholarship fund was raised from Rs. 25,000 to Rs. 45,000. The Maharajas of Gwalior and Bharatpore maintain additional scholarships. The College was affiliated in Arts and in Law in 1889, and in Science in 1896. The immediate control of the College is in the hands of a Committee, two of the members of which are official, the remainder being nominated by the Trustees. The College consists of two departments, *viz.*, the College proper under a principal, and the School under a head master. There are 700 schoolboys and students enrolled, of whom over 200 are boarders in the College Boarding Houses and 104 in the Caste Boarding Houses.

Mr. THOMAS CUTHBERTSON JONES, Principal, Agra College, Agra, was born in 1869, at Douglas, in the Isle of Man, and educated at Bristol Grammar School, and Wesley College, Sheffield, under Dr. Dallinger, and at Hanover, Germany. He graduated at the London University, taking first class honours in English and French literature. After completing his collegiate career, Mr. Jones accepted the position of senior house master at Bilton Grange College, Harrogate. In the year 1894 he proceeded to India to take up the appointment of headmaster at Oak Openings School, Naini Tal. From there he was transferred to Agra College in 1895, in the post of Junior Professor, and in 1897 was promoted to Senior Professor. In 1901 he was made Principal of the College, on the death of Mr. A. Thomson, the late Principal. Mr. Jones is a Fellow of the Allahabad University.

AITCHISON CHIEFS' COLLEGE, Lahore, Punjab. This institution was founded for the benefit of the sons of Indian Noblemen, Rajahs and Nawabs and gentlemen of high social standing of the Punjab and Frontier Provinces, Hindu, Sikh and Mussulman. The object of the College is to impart a sound liberal education, on English public school lines, to Indian gentlemen of the above class. Special stress in the higher classes is laid upon political economy, law, and revenue, as tending to perfect the administrative abilities of the pupils, and thus fit them for the exalted stations they will be called upon to occupy in later life. Great pains are taken to impart a knowledge of the English language and literature, and the award of a diploma for a special course to a student of this College from the Government of India, is accepted as equivalent to the pass certificate of the Punjab University for the Entrance Examination. The whole course of the College is directed towards educating the students as gentlemen, in the best sense of the word. Their physical well-being is well looked after, and games and manly sports are compulsory, as in similar institutions in England. The students are accommodated in three boarding-houses situated behind the main College building. Each student is allotted a separate room. In the grounds there is a small hospital, also a gymnasium, and for the religious needs of the various classes there is a mosque (built by the late Nawab of Bahawalpur) for Mussulmans. A temple and a dharamsala, for the Hindus and Sikhs, respectively, are requirements which it is hoped will shortly be met. Attached to the College there are several acres of cultivated land, under wheat and other produce, the proceeds of which assist the finances of the College. There are at present about eighty-three students, nearly all boarders, at the College, and the attendance is on the increase. The foundation-stone of the institution was laid by Sir Charles Aitchison, when Lieutenant-Governor of the Punjab. The authorities had long been cognisant of the necessity for such a college for the important class which now benefits by it; but it was not till public interest was awakened that it assumed practical shape. This being effected, the Indian Chiefs and Princes speedily proved their appreciation of the project, and the joint capital of Rs. 4,82,000 was raised within a comparatively short period.

Mr. FREDERICK ARCHIBALD LESLIE-JONES, M.A., Principal, Aitchison College, Lahore, was born in England in the year 1874, and was educated at Bromsgrove School,

Mr. F. A. LESLIE-JONES.

and Lincoln College, Oxford, where he graduated in 1897. He then joined Marlborough College as Assistant Master, where he remained till 1904, when he proceeded to India to take up his appointment at the Aitchison Chiefs' College. Mr. Leslie-Jones is a Fellow of the Punjab University.

History of the BOARD OF EXAMINERS, Calcutta.

The Board of Examiners came into existence in January, 1854, in succession to the College of Fort William, abolished at that time. It was in reality only a change of name, as the Board of Examiners performed all the functions hitherto discharged by the College of Fort William. The change was probably due to a feeling that for many years previously the title of 'College' was somewhat of a misnomer, as the character of Lord Wellesley's original foundation had been completely altered by changes in system introduced during successive administrations. From being a College with resident students and tutorial staff, it had become merely an institution where examinations were held, and consequently was, in fact, as its new designation implied, a Board of Examiners.

Sir Robert Barlow, Baronet, was appointed its first President in 1854, while the duties of Secretary were entrusted to Lieutenant Nassau Lees, who was at the time of its abolition Secretary to the College of Fort William. There were also several members of the Board.

The duties of the Board of Examiners were not confined to examining in Oriental Languages, inasmuch as from 1856 to 1861, the Board held the examinations of candidates for direct commissions in the Army.

The Board has, for some years past, consisted of a President, traditionally a Judge of the High Court, and a military officer as Secretary. The Secretary, assisted by a staff of Maulavis and Pandits, is also Examiner in certain languages. Additional temporary Examiners are appointed from time to time as necessity arises. There used to be a Sanskrit and Bengali Examiner permanently attached to the Board, but this office was abolished in 1902. There was too, in former years, a Hindi Examiner, but upon the retirement of Dr. Hoernle in 1898, this post also was abolished.

The Board of Examiners was originally located in Writers' Buildings, in the offices formerly occupied by the College of Fort William. About 1855 it was moved to No. 46, Chowringhee, as a temporary measure, and thence to No. 1, Little Russell Street. During the Mutiny of 1857 this latter house was appropriated as a hospital for officers, and the Board was in consequence transferred to No. 8, Elysium Row (now No. 17). On January 1st, 1902, the Board's Offices and Library were moved to the top flat of the old Agra Bank Building at the corner of Mangoe Lane and Mission Row, but have now again been moved to a quieter and more suitable position, *viz.*, No. 4, Park Street, not far from the building of the Asiatic Society of Bengal.

COLLEGE OF FORT WILLIAM. Founded by the Most Noble Richard, Marquis of Wellesley, 1800.

Provost—Revd. David Brown.

Vice-Provost—Revd. Claudius Buchanan.

Members of the College Council.

The Hon'ble Henry Wellesley, 1801.

George Hilaro Barlow, Esq., 1801.

Neil Benjamin Edmunston, Esq., 1801.

John Lumsden, Esq., 1802.

John Herbert Harington, Esq., 1802.

Henry Thomas Colebrooke, Esq., 1802.

John Fombelle, Esq., 1807.

James Stuart, Esq., 1810.

Robert Ker, Esq., 1817.

John Fendall, Esq., 1817.

William Edward Rees, Esq., 1818.

Sir J. E. Colebrooke, *Bart.*, 1819.

Courtney Smith, Esq., 1820.

William Butterworth Bayley, Esq., 1820.

George Swinton, Esq., 1820.

Holt Mackenzie, Esq., 1820.

S. T. Goad, Esq., 1822.

J. H. Harington, Esq., 1824.

A. Stirling, Esq., 1825.

W. H. Macnaghton, Esq., 1825.

E. Molony, Esq., 1825.

Henry Shakespeare, Esq., 1826.

H. G. Christian, Esq., 1826.

Secretaries—

Charles Rothman, Esq., April, 1801.

William Hunter, M.D., 1st November, 1805.

Lieut. William Macdougall, Offg. May, 1807.

Dr. John Leyden, Asst. Secy., 20th September, 1807.

Lieut. Abraham Lockett, 1st November, 1811.

Lieut. Archibald Galloway, Asst. Secy., 1st November, 1811.

James Atkinson, Esq., M.D., Offg. Asst. Secy., 3rd January, 1815.

Lieut. Thomas Roebuck, Offg., 7th January, 1817.

Lieut. Ruddel, 1st European Regiment, 11th March, 1824.

Lieut. Hugh Todd, 21st Native Infantry, 17th January, 1832.

Captain J. W. J. Ouseley, 28th N. I., 17th April, 1832.

Captain G. T. Marshall, 35th N. I., 4th July, 1838.

Ensign W. Nassau Lees, 42nd N. I., 5th March, 1853.

BOARD OF EXAMINERS, CALCUTTA. *Instituted 24th January*, 1854.

President—Sir Robert Barlow, 1854.

Secretary—Lieut. W. Nassau Lees, 42nd Regt. N. I., 1854.

Presidents.

A. Sconce, Esq., C.S., 1858.
Sir Charles Trevelyan, K.C.B., 1863.
E. T. Trevor, Esq., C.S., 1868.
V. H. Schalch, Esq., C.S., 1876.
J. O'Kinealy, Esq., C.S., 1877.
R. F. Rampini, Esq., C.S., 1899.

Secretaries.

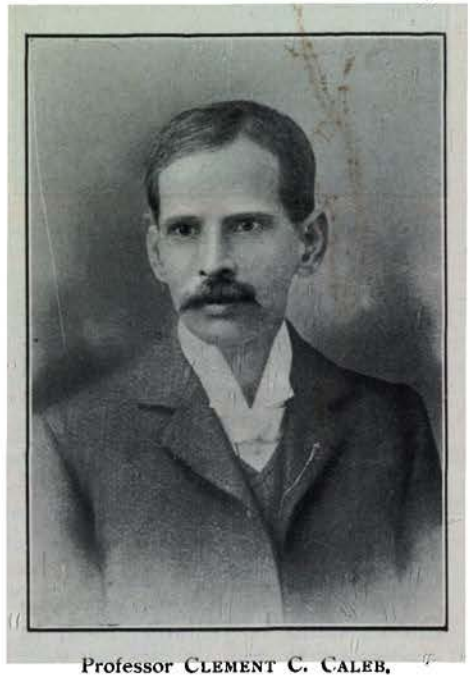
Major E. St. George, 16th April, 1868.
Captain H. S. Jarrett, 18th April, 1870.
Surgeon-Major G. S. A. Ranking, M.D., M.R.C.S., I.M.S., 17th June, 1894.
Major (now Lieut.-Colonel) D. C. Phillott, 7th April, 1905.

Babu ANANDA MOHUN BOSE. The late Ananda Mohun

The late ANANDA MOHAN BOSE.

Bose was born in the district of Mymensingh in 1848 and educated at the Mymensingh High School, and the Presidency College where he had a brilliant career. He stood first in the F.A., B.A., and M.A. examinations, and, immediately after passing the latter, he was appointed Professor of Mathematics at the Presidency College. In the following year he gained the Premchand Roychand Scholarship, and later on proceeded to England, to complete his education. He entered at Christ Church, Cambridge, and took part in the debates of the Cambridge University Union. On being called to the Bar in 1874, he returned to India and joined the Calcutta High Court. Here he rapidly acquired a reputation as an advocate; but his ambitions did not tend in that direction, and he devoted only sufficient of his time to his professional work to enable him to earn a living. His aspirations were to a large extent political, and he was one of the pioneers of the political movement in Bengal. With his friend, Surendra Nath Banerjee, he founded the Indian Association in 1876, of which he was elected the first Secretary. On the formation of the Indian National Congress he became one of its most fervent supporters. In 1897 he again visited England, for the purpose of representing to the British public the aspirations of educated Indians, and their alleged grievances against the Government. During his stay, which extended over a year, he addressed numerous public meetings, and on his return to India in 1898, he was elected President of the National Congress, which met that year in Madras. He also took the deepest interest in educational matters, and in the various religious and social questions affecting his countrymen. He was a Fellow of the Calcutta University and for many years he rendered valuable service in the Senate. He was the first member elected to represent the University on the Bengal Legislative Council, and he also served on the Education Commission appointed by Lord Ripon. He founded the City College, which he, later on, handed over to a Committee. The cause of female education appealed to his sympathies, and he was instrumental in founding the Banga-Mahah Vidyalaya (afterwards amalgamated with the Bethune College) and the Brahmo Girls' School. Babu Ananda was a deeply religious man. While yet a student he joined the Brahmo Somaj and when, in 1878, the split occurred among the progressive Brahmos, he was selected as the leader of the seceding party, which under his leadership was organized into a vigorous and active Church, since known as the Shadharan Brahmo Somaj. His health broke down after his last visit to England, and he died on the 20th August, 1906. His last public appearance was on the 16th October, 1905, when he laid the foundation-stone of the projected Federation Hall, and was carried to the spot in an invalid's chair.

Professor CLEMENT C. CALEB, M.B., M.S. (Durham), M.R.C.S. (Lond.), Professor of Physiology, Medical College, Lahore, was born at Rai Bareilly, India, and educated at the Lahore Medical College, King's College, London, and the University of Durham College of Medicine, Newcastle-on-Tyne. In 1884, he graduated as M. B., taking honours at the first examination for that degree, and as M. S. in the following year. He is also Senior Medical Scholar and Associate of



Professor CLEMENT C. CALEB.

King's College, London, and a Medallist and Prizeman in the University of Durham. Professor Caleb was for nearly two years Resident Medical Officer at the Mount Vernon Hospital for Consumption and Diseases of the Chest, Hampstead. In 1887, on the establishment of two additional professorships at the Lahore Medical College, he was, on account of his distinguished College career, and on the recommendation of the Punjab Government, appointed as Professor of Physiology and Pathology at the

Lahore Medical College. During his long connection with the Lahore Medical College he has also occupied the Chairs of Botany and of Comparative Anatomy. He is at present Dean of the Faculty of Science, and one of the representatives of that Faculty on the Syndicate of the Punjab University. He is an examiner in Physiology, Botany, and Comparative Anatomy in the University, and is the author of "Eyesight in Schools" published by the authority of the Punjab Text-book Committee and adopted by the Educational Departments of Bombay and the Punjab as a text-book in Secondary Schools.

Professor Caleb practises as a consultant in eye and ear diseases. His principal contributions to medical literature are:—"Stammering," "Ferments in relation to Fermentation, Putrefaction, and Disease," in the Transactions of the Medical Society of the University of Durham; "Hypnotism" and various papers on "Refraction" and "Diseases of the Eye" in the Calcutta *Indian Medical Journal.*

Professor Caleb takes a keen interest in Freemasonry, and is a Past Master of Lodge "Hope and Perseverance" No. 785, E.C., of Lodge "Industry" No. 1485, E. C., and of Lodge "Albert Victor" No. 2370, E.C. He is a Past President of the District Board of General Purposes, Punjab, and one of the Trustees of the Punjab Masonic Institution.

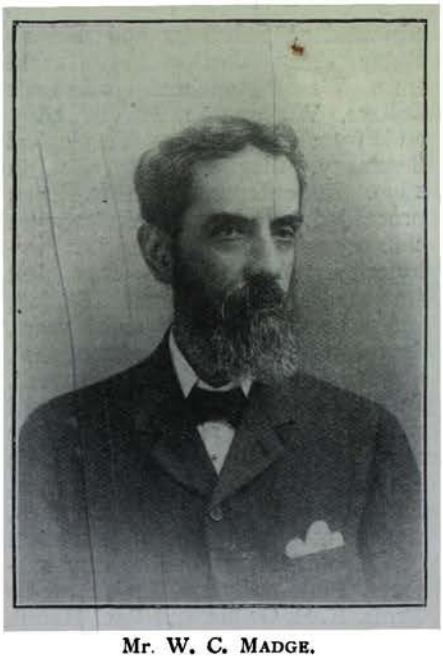
EUROPEAN AND ANGLO-INDIAN DEFENCE ASSOCIATION. On the 28th February, 1883, one of the largest meetings of Europeans ever held in the Calcutta Town Hall assembled to protest against the "Ilbert Bill." This Bill deprived European British subjects of the right of trial by Magistrates of their own race, and caused intense excitement all over India. The excitement spread to the British Army and compelled Lord Ripon's Government ultimately to concede the right of trial by Jury, a right previously confined to Sessions and High Courts, to every European British subject brought up on a warrant before any Magistrate. The Town Hall Meeting appointed a Committee, consisting of Messrs. J. J. Keswick, J. Flemington, W. L. Thomas, A. B. Miller, G. H. P. Evans, J. G. Apcar, J. Gubbay, J. H. N. Branson, E. D. J. Ezra, H. Finter, W. C. Madge, J. Murdock and D. Cruickshank, to prepare memorials against the Bill, to both Houses of Parliament and the Government of India.

A Sub-Committee of the above Committee was then formed with Mr. A. B. Miller as Chairman, and Mr. W. C. Madge as Honorary Secretary, to form and draw up a constitution for an Association "to watch over and protect the interests and promote the welfare" of all persons of European or British birth or descent, or adopting the European standard of living in India. Over a lakh and-a-half of rupees, or £10,000, was collected, which sum was increased by Rs. 30,000 more in annual subscriptions in the first year.

In the two most strenuous years of the Association, 1883 and 1884, Mr. J. W. Furrell and Mr. S. E. J. Clarke were its Honorary Secretaries; Mr. Clarke holding the office alone in 1885, and being succeeded in 1886 by Mr. Madge, its present incumbent. The successive Presidents have been Mr. J. J. Keswick, Sir A. Wilson, Mr. D. Cruickshank, Mr. L. P. D. Broughton, Mr. J. N. Stuart, Sir M. Turner, Mr. L. P. Pugh, Mr. W. A. Bankier, Mr. W. Garth, and Mr. H. W. S. Sparkes.

The Association has carried on its work for over 20 years, scrutinizing any fresh legislation as well as any administrative action of Government, affecting its constituents. Its Council of 20 has contained leading members of the commercial, legal and trading classes, and its constituency has consisted of the classes represented on its Council, besides planters. The Government has for years recognised the body, and consulted it on subjects of public importance. The Association holds an Annual Meeting, usually in March, at which it presents its Annual Report and Accounts, and elects its office holders for the ensuing year. Originally inspired, no doubt, by warm race feeling, the Association has in recent years been divested of all animus; and while it seeks mainly to preserve valuable legal rights on behalf of its own constituents, even Indians perceive that the preservation of such rights, which, if once abolished, will never be revived, may eventually be extended to all classes, as the country advances in education and civilization and becomes better able to appreciate them.

Mr. WALTER CULLEY MADGE, Secretary to the European and Anglo-Indian Defence Association, was born in the year 1841 at Calcutta and proceeded to Scotland for his education, being placed for this purpose at the Edinburgh High School. He returned to India in 1858 and joined the old Salt Department as Superintendent, in which post he remained for three years. He was then appointed to the Bengal Police and remained in that Department for two years as Assistant Superintendent, and thereafter was appointed a Deputy Magistrate. In the year 1872 Mr. Madge joined the Press on which he laboured with some success. In the troubled times in 1881 the European and Anglo-Indian Defence Association was founded and Mr. Madge joined as Honorary Secretary to the Executive Committee. He has remained connected with that body almost ever since, first as Honorary, and afterwards as paid Secretary to the Association. He is also Pre-



Mr. W. C. MADGE.

sident of the Anglo-Indian Association which represents domiciled Europeans and their descendants. Mr. Madge is an Honorary Magistrate, and Justice of the Peace of Calcutta, a Member of the Christian Burial Board, a Member of the Committee of the Hospital Nursing Institution, a Councillor of the Women's Friendly Society and a Government nominated Commissioner of the Calcutta Municipal Corporation.

Rev. ARTHUR HENRY EWING, PH.D., D.D., Principal of the Allahabad Christian College (Presbyterian, U. S. A.), Allahabad, was born at Saltsburg, Indiana County, Pa., U. S. A. in the year 1864. He was educated at Saltsburg and Elder's Ridge Academies, and graduated from Washington and Jefferson's College, Washington, Pa. in 1887, and from the Western Theological Seminary, Alleghany City, Pa., in 1890. In September 1890 Mr. Ewing proceeded to India as a missionary in connection with the American Presbyterian Church. He was first stationed at Ludhiana, Punjab, where he remained for eight years, devoting himself to educational, literary, and general mission work. In 1899 he returned to America and remained as a resident graduate student at the John Hopkin's University, Baltimore, for two years. His principal subject was Sanskrit, under the guidance of Professor M. Bloomfield, and subsidiary subjects, Philosophy and Arabic, under Profs. E. H. Griffin and Paul Haupt. In the year 1901 Dr. Ewing returned to India and was stationed at Allahabad for special educational work. The College at Allahabad was started in 1902 and Dr. Ewing has remained in charge ever since. He has a good deal of administrative work to do in the North India Mission of the American Presbyterian Church. He is Honorary Secretary of the North India Tract Society, and Treasurer of the North India Mission. The Mission at Allahabad was founded in the year 1836, and has three centres, Katra, Jumna, and the City. The first Mission Press in Northern India was started at Katra. There is a missionary's residence at Katra, also a Church, a Christian village, the Mission Press and the Mary Wanamaker Christian Girls' High School, a beautiful building worth half a lakh of rupees, built by the Hon. John Wanamaker of Philadelphia. There are three missionary residences at the Jumna, a Church, a High School, a Christian Boys' Boarding Department and the Allahabad Christian College. In the city there is a Women's Hospital and a large church. The Mission took over from the East India Company its college work at Allahabad in 1846, and conducted the College for some years; but after the Indian Mutiny, continued the establishment only as a High School. In 1853 the Mission bought the Court House at the Jumna, and converted it into a High School building. The Christian Girls' School was founded at the Jumna in the year 1885, and removed to Katra in 1904.

Rev. ARTHUR H. EWING.

The Allahabad Christian College was started in 1902. Since 1903 there have been added a Laboratory, a Hostel, the Princeton Building, a Workshop and a Power House, built by the Mission, and two bungalows, purchased from the East Indian Railway Co. The College has an Electrical Engineering Course which covers three years after the B. Intermediate Course of the Allahabad University. A Manual Training Department is being started in connection with the High School. This Department offers shopwork and drawing, along with the major literary or "book" subjects of the School Course.

The GOVERNMENT COLLEGE, Lahore. This Institution was opened on 1st January 1864, under the temporary charge of Mr. C. W. Alexander, at that time Inspector of the Lahore Circle. The building in which the College was located was that known as Maharaja Dhian Singh's "haveli," within the precincts of the city of Lahore. At the commencement there were only seven students, and for a time the progress of the institution was very slow, and great pains and special exertions on the part of Government have been required to raise it to its present status. Of the first seven students, all matriculated at the Calcutta University. To add stability to the College it was proposed to affiliate it to the Calcutta Arts College. Mr. Alexander was succeeded after three months by Mr. W. H. Crank from La Martinière College, Lucknow. In the same year the authorities decided to offer the Principalship to Dr. G. W. Leitner, a distinguished Oriental scholar and Professor of Arabic and Mahomedan Law at King's College, London. Dr. Leitner accepted the offer, and on arriving in India took charge of the institution which his care was to foster into vigorous life later on. His first step was to separate the College from the Lahore Zillah School, by providing for the former in separate rooms of the building. When Dr. Leitner assumed charge there were only sixteen students at the College. Dr. Leitner set himself assiduously to popularise the institution. He formed many acquaintances among the Indian gentry of Lahore, who welcomed him to their circle on account of his comprehensive knowledge and sympathy. He shortly founded a society "for the diffusion of useful knowledge and for the revival of Oriental learning," with a library and reading room attached. Dr. Leitner, however, had important matters to claim his attention; and having to leave for Dardistan for the purpose of linguistic investigations, the progress of the College was not maintained. The paucity of the remaining staff made ade-

quate tuition difficult, and students were not attracted. The College languished till Mr. B. H. Baden-Powell, then Judge of the Small Cause Court, and Dr. Leitner came to its aid. Public interest was elicited by a gratuitous series of Law lectures delivered by Mr. Baden-Powell. The attendance improved, until in 1871 there were 52 regular undergraduates, besides many casual students. The staff was also expanded by the engagement of Dr. C. R. Stulpnagel, M.A., as assistant Professor. At about this time the institution was removed to other premises and installed in a large bungalow in Anarkali, belonging to Lala Devi Das, close to the present Ice Factory. For a long time, however, the establishment of the College on a firm basis was delayed by the reluctance of the Government to create a Punjab University to which the existing colleges, Arts, Oriental and Medical, should be affiliated, and which should be empowered to grant degrees. The distance of the Calcutta University, to which the colleges were affiliated, and the time involved in obtaining Calcutta degrees, were disadvantages felt for several years. A movement was set on foot to induce Government to establish a University in the Punjab, but it was long without success. In the year 1877, the affairs of the Lahore College were improved by the addition of the Delhi College staff, including Messrs. Sime and Dick. The College had some time previously been removed to Dr. Rahim Khan's Bungalow, on the site of the present Veterinary College, as a temporary measure, pending the completion of the building in which it is now installed, and which was erected at a cost of 3½ lakhs of rupees. In the year 1882, the Government yielded to the pressure of public opinion, and by an Act passed in that year, the Punjab University College was transformed into the Punjab University, empowered to grant degrees upon the same footing as other Universities, and the Government College was given more of the character of a college in an English University than it had previously possessed. The popularity of the College was now established, and a couple of years later the number of students had reached 128, and Mr. Ibbetson, officiating Director of Public Instruction, tried to save the staff from being again overwhelmed, by prohibiting further admissions. This, however, was found impracticable, and the numbers increased until in 1886 they reached 248. There is a Boarding house connected with the College which was completed in 1889. In 1891, the Presbyterian Church in the College grounds was acquired and transformed into a gymnasium, and playing fields are being provided in the fringe of land around the College, athletic games now forming a part of the curriculum. The picturesque building in which the College is at present located is situated on an eminence to the east of the District Kutcherry and north of the public gardens. The structure is in the Gothic style with a large central clock tower. It contains accommodation for the College, a large examination and lecture hall, and laboratories for Physics, Chemistry, Botany and Zoology. There is also a good Gymnasium. The College has recently taken over from the Medical College the preliminary teaching of Science, Chemistry, Physics, Botany and Zoology.

Mr. SAMUEL ROBSON, Principal, Government College, Lahore.

Mr. S. Robson.

was born in 1853, in Scotland, and educated at the University of Edinburgh. He obtained Honours in Classical literature in 1877. In the following year he entered the service of Government. He at first joined the Presidency College, Calcutta, but was soon transferred to Patna. He next served at Hooghly, and again at Patna until 1897, when he was appointed Principal of the Dacca College. After a year's service at that centre, he was appointed to Lahore, as Principal of the Government College, which post he still holds.

Rev. PSACK HYRAPIET JACOB, until recently, head of the Armenian Church, Calcutta, was born in 1844 at Julfa, Ispahan, Persia, and educated at All Saints' Cathedral in Julfa. Mr. Jacob was for a quarter of a century, prior to ordination, teacher at St. Catherine's Girls' School and other national schools at his native place. He was also English tutor to the same institutions, and served in the choir of the schools. In 1883 he took holy orders, and was ordained by the Most Reverend Gregories, Prelate of the Armenians in Persia and India, and was placed in charge of St. Mary's Church in the parish of Julfa. He became a member of the Holy Synod of the Julfa Cathedral, and remained in charge of the schools and ecclesiastical printing press. Shortly after his ordination he was for a short time in charge of the Armenian Church at Bushire in the Persian Gulf, and on his return to Julfa took up the same duties as before. In 1886 he was sent to India and was appointed a junior priest of the Armenian Church of Nazareth at Calcutta, which appointment he held for about five years. He was then appointed to a mission by his Diocesan Bishop to tour India and Burma for the purpose of collecting contributions for a new Seminary for Girls and Boys at Julfa. He returned to Persia, after having accomplished this mission, in 1901, and took up his former functions at Julfa. In addition to these duties, he was in charge of the Vestry of the Cathedral Convent and the Treasury, and was the teacher of religion at the Girls and Boys' Schools; also Secretary of St. Catherine's Nunnery for some years. His duties included the inspection of

the Industrial School at the same convent and supervision of the convent management. In 1904 when the Archbishop of Persia (Sahak Ayatian) intending to visit Shiraz, Bushire, and all other dioceses in India in connection with his Holy See, set out on his tour, he took with him the Rev. Jacob as his Chaplain and Interpreter. His Grace had a very successful tour, being warmly received by Lord Lamington, Governor of Bombay, the Lord Bishop of Bombay, and at Calcutta by Lord Curzon, then Viceroy of India. Before leaving India, his Grace the Archbishop placed the Rev. Jacob in charge of the Armenian Church at Calcutta and here he laboured until the end of 1907. Besides his pastoral duties, he has taken great interest in the literary side of his work. In 1886 he translated a book on Holy Week services, for the convenience of the non-Armenian speaking members of his community. He has also done very useful work in translating the Armenian Catechism and Armenian Services and Hymns into English, and modernising ancient musical notation for the use of the Anglicised Armenian community at Calcutta. In this he has been very ably assisted by Miss Amy Apcar. He has also published valuable and interesting historical sketches of the Armenian Church.

The J. N. PETIT INSTITUTE, Hornby Road, Fort, Bombay. This Library was first started on the 1st April, 1856, in a small room, by a few Parsee students, among whom may be mentioned the late Mr. J. N. Tata. It was then called "The Fort Improvement Library." On the 4th December, 1857, at a meeting held at the Town Hall under the Presidentship of the late Dr. Fraser, a regular Committee was appointed, which included such personages as the late Mr. Nowrojee Furdoonji, and Dr. Narayan Daji. On the 23rd June, 1858, Dr. Haines, the then Educational Inspector, arranged that the Library should be supplied with free gifts of books, etc., from the Government. In September, 1866, the Library was named "The Fort Reading Room and Library." In 1875 it was registered under Act XXI of 1860 (being the Act for the Registration of Literary, Scientific and Charitable Societies). In 1891 the late Mr. Nesserwanjee Manockjee Petit endowed it with a sum of Rs. 25,000 for perpetuating the memory of his only son, Jamsetjee, who died in March, 1888, and who was a Life Member and Director of the Library. In recognition of this gift, the Institution was named "The Jamsetjee Nesserwanjee Petit Fort Reading Room and Library."

Bai Dinbai Nesserwanji Petit, mother of Mr. Jamsetjee, subsequently made a munificent gift of a building costing Rs. 2,50,000 for the use of the Library, and by a resolution dated 17th of March,

Mr. R. M. PATELL.

1898, the Institute was designated "The Jamsetjee Nesserwanjee Petit Institute." The building is invested in four trustees, and, together with other eight members, two nominated by the trustees and six elected by the general body of members, they form a Committee of Management, having the holder of the Petit Baronetcy as the President. The total funds of the Institute (exclusive of the Building Reserve Fund) amount to Rs. 45,000. The total number of newspapers and periodicals subscribed for is two hundred, and the sum of Rs. 10,000 is expended annually on the subscriptions to these papers and the purchase of new books. The Library is fast becoming one of the most popular institutions of its kind in Bombay, attracting to itself a large number of members. This number has steadily increased from year to year, and since 1896 it has risen from 1,150 to 2,600.

La MARTINIÈRE COLLEGE, Lucknow. Among the many remarkable men from the West who laid the foundation of European domination in India, there is none who is better remembered to-day than General Claud Martin, the Founder of the Martinière Institutions at Lucknow, Calcutta and Lyons. Born of very humble parents, at Lyons, in France, by his own exertions he obtained a liberal education which stood him in good stead in his after-career. Endowed by nature with a strong military bent, he sailed for India in the year 1751, and on arrival at Pondicherry (then, as now, the French capital in India), he entered the ranks of the army as a dragoon in the Governor's body-guard. He served with distinction in the ten years' war with the English, being present at the first campaigns, which were favourable to the French arms. He served in the Regiment of Lorraine, the most distinguished in the French service, and was promoted. He was present at the taking of Gudalur and Fort St. David, in the capture of Blacktown, and in the siege of Fort St. George at Madras. When the tide of victory turned and Sir Eyre Coote struck a fatal blow to French aspirations in India at the battle of Wandewash, where the French Generals, Lally and Bussy, were grievously defeated, Claud Martin remained faithful to his service, when so many deserted. He was one of the prisoners at the unconditional surrender of Pondicherry, which took place in 1761. But the French power, totally unable to make head against the English in India, waned, and it was found useless to continue the struggle for mastery which had finally passed to their rivals. Peace followed, and Claud Martin, his duty to his country honourably accomplished, joined the service of the Honourable East India Company in the command of a company

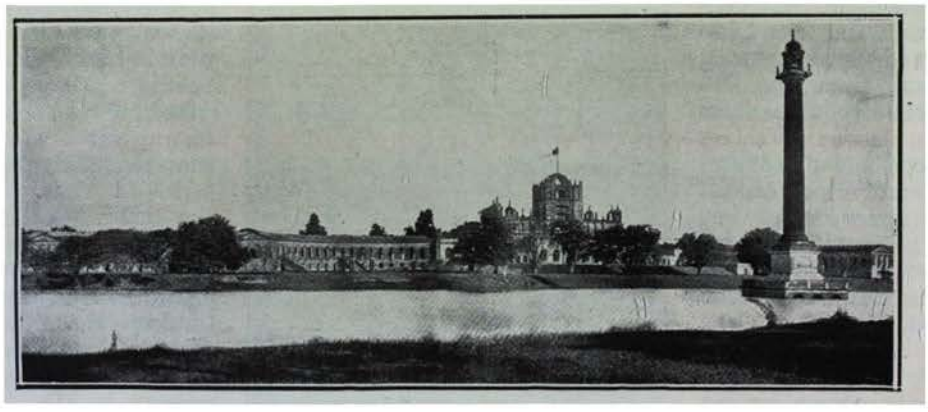
which he raised from his fellow-countrymen. Having changed his colours, Claud Martin was as true to his new allegiance as he had been to his old service. But the French company he raised was unreliable, and despite his efforts, many deserted. The company was finally disbanded, and Martin, in 1765, was placed in command of a squadron of cavalry in Oudh. When Shuja-ud-Dowlah, Nawab Vizier of Oudh, decided, in 1765, to come to terms with the English, whose inveterate enemy he had been, he applied for and obtained the services of Martin as superintendent of his park of artillery and arsenal; Martin retaining his rank in the English service and received his promotion in due course. In this way he finally attained the rank of General. His services to the Nawab Vizier of Oudh were inestimable. He enabled him to retain the friendship of the English, and being a strong man in troublous times, he befriended the merchants and bankers of the State, who placed themselves and their property under his protection. He entered into financial operations, and amassed a very large fortune, wherewith at his death he was enabled to endow the splendid institutions which have perpetuated his name. The building which is now occupied by the Lucknow Martinière College, was built as a palace for his own occupation by General Martin. It partakes of the nature of a fortress as well as of a residence, as fitted those far-off turbulent times. But he did not occupy it during his lifetime, although he was buried there. His death occurred shortly after the siege of Seringapatam and downfall of Tippoo Sultan, where, as a Company's officer, he was present. With great forethought General Martin had provided that his remains should be interred in the palace which is now the Lucknow Martinière, thus securing the building from molestation; for the Mahomedan Government respected tombs where they respected nothing else.

The above is a slight sketch of the career of the man to whom education in modern India is under such an immense obligation. His will provided that his immense possessions should be realized and utilized in the founding of the schools which now bear his name; but there followed apparently interminable litigation over the meaning of the provisions, which long delayed the fruition of his benevolent schemes. It was not till 1845, nearly half a century after General Martin's death, that a decree of the Supreme Court set free the funds which had been accumulating, and gave effect to the will which provided for the founding of "a school for children and men to teach them the English language and religion." At the same time, the beautiful palace on the Gumti, at Lucknow, which had remained untenanted for many

The late General CLAUD MARTIN.

years, was handed over for the purpose of a school building. At its foundation, the school gave small promise of developing into the important institution it has since become. Under its first Principal, Mr. John Newmarch, there were only fifty pupils in residence, and before the Mutiny it did no great things. On the outbreak of the Mutiny and the siege of the Lucknow Residency, the Martinière building was abandoned. Mutineers broke in and rifled General Martin's tomb, in search of treasure, but his remains were afterwards recovered and re-interred in the same tomb. The Martinière boys were transferred to the Residency, in the defence of which the elder lads took part. After the Mutiny was quelled, the school was reopened, and for fifty years has been increasing in importance, the sound education imparted at the institution leading to the success of so many pupils in after-life that its reputation as a great educational centre has become known far and wide. At present there are about two hundred and fifty pupils receiving their training at the Martinière. Of these, eighty are on the foundation, and are entirely provided for by the fund left by General Martin. The palace and grounds left by General Martin have been adapted to the purpose of a residential college, with great skill. The building is a magnificent one and, built for the needs of those unsettled times, it partakes of the nature of a fortress. The central tower is constructed strongly, for purposes of defence; its walls are of great thickness, the roof is bomb-proof and loop-holed bastions are provided. There are subterraneous chambers provided for protection from the heat in the summer, and above these rise a series of flats. In general plan, the building consists of two semi-circular wings extending from the central tower, and from these again extend long annexes containing dormitories, class-rooms, masters' quarters, etc. The buildings extend over a quarter of a mile in length. The large hall in the centre tower, originally designed as a banqueting hall, as is evidenced by the decorations, has now been converted into a chapel. It is furnished with two beautiful stained-glass windows, which were given by past and present Martinière boys on the occasion of the Jubilee of the school in 1905. A marble floor for the chancel, and the carved screen which separates it from the library, were presented at the same time. A handsome flight of steps extends the whole length of the building on the East front. On this side, too, is the artificial lake, in the middle of which a column was erected, to the memory of General Martin, by his adopted son. This column is over 100 feet in height, and forms a landmark for miles around. The banks of the lake are adorned with shade trees. Such is the

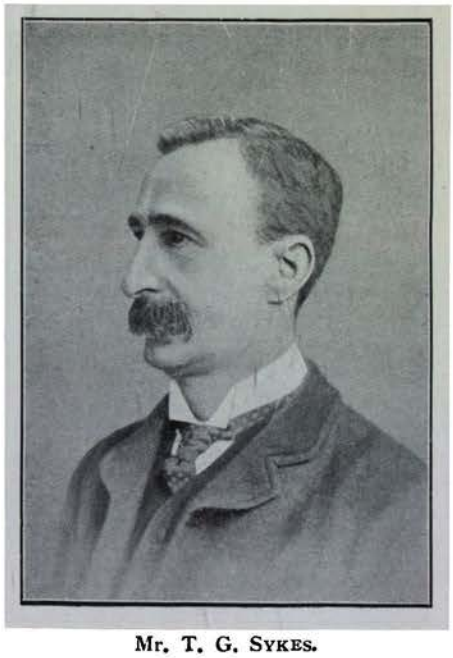
picturesque environment in which the fortunate boys of La Martinière College pursue their studies. The education afforded is liberal, and equal to that of the best English schools. This is ensured by the excellent personnel of the masters appointed, a large number of whom have English degrees, and have been trained in the best traditions of English scholasticism. English methods and discipline are preserved throughout, and the English monitorial system has been implanted on Lucknow soil, and under the careful supervision of the staff, has been attended with the happiest results. For the monitorial staff, rooms for private study out of school hours have been allotted in a block of buildings, situated in the same compound as the house of the first assistant master. Judged by results, the Martinière has done splendid and lasting work. Martinière boys are found in every branch of enterprise in India and elsewhere, so well have they pushed themselves to the front. Great numbers of them have passed into the public service through the Thomason Engineering College at Roorkee, which has almost been turned into a preserve for Martinière-trained young men. To take the record of one batch of class fellows, whose records were investigated; one is now Chief Engineer of Western Australia; another, a Lieutenant-Colonel in the Indian Medical Service; a third, Under-Secretary in the Public Works Department of an Indian Province; a fourth, Secretary of Irrigation, and decorated with the C. I. E.; four more are Executive Engineers in the Public Works Department, and others of the same class have been traced to various honourable positions in law, medicine and commerce. This is but a specimen of the general success in later life which attends the youths trained at this remarkable institution. The staff of the College, both teaching and subordinate, is thoroughly complete. Out of a dozen masters five have English degrees, and the rest have certificates which proclaim their thorough efficiency. There is a resident assistant-surgeon and a trained nurse. A senior and junior sergeant are in charge of the food and clothing arrangements, and two matrons are in charge of the dormitories. The servants, who amount to a small army, reside in a village on the estate, presided over by a daroga, who is a lineal descendant of General Martin's man of affairs. Notwithstanding the site of the College is on the plains, the health of the inmates has been uniformly good, a fact due, no doubt, to the excellent arrangements. All the dormitories are on the upper floors and the ventilation is perfect throughout. Further, the greatest attention is paid to physical culture, the finest method of warding off disease. There is a fine swimming bath, 85 feet in length, on the premises, and swimming is systematically taught and daily practised. A smaller bath, 43 feet in length, is provided for the novices and others unable to swim; the depth of this is only 3 feet. Naturally, emulation to be admitted to the full-sized bath makes every Martinière boy a swimmer. A very complete gymnasium is also attached to the school, replete with every appliance, airy and well ventilated. By a wise provision, gymnastics form part of the curriculum of the school, and the exercises are carried on under strict supervision, and with corresponding benefit. Sports of all kinds are made a great feature of La Martinière school life. Cricket and football are systematically practised, and the College can put redoubtable teams in the field in both these sports. The school grounds for cricket, football, hockey, and tennis, are suitably laid out, and every encouragement is offered to the boys to perfect themselves in games to which much good, in the invigoration of body and mind may be ascribed. The College has a most efficient Volunteer cadet corps. Service is compulsory on every boy of sufficient age. Drill and training are parts of the educational discipline of a Martinière boy. This system, the desirability of which is only now being recognized in England, has been in force for thirty years at La Martinière. The boys are gradually educated into becoming efficient riflemen. Practice is at first given with the Morris tube in the covered shooting gallery, and subsequently with the rifle on the range situated on the Martinière grounds. Every Martinière boy is taught the traditions of his school, and the example of the lads who held the "Martinière post" at the Lucknow Residency, serves to excite military emulation and ensures the efficiency of the corps. The utmost care is lavished on the health of the boys. In 1892, an outbreak of enteric fever caused the governors to investigate, with the result that they found it expedient to establish a cowhouse and dairy, with English machinery, refrigerators, and separators, for the proper control of the milk-supply. Enteric was thus entirely stamped out, and sickness of any sort is now rare. The civil surgeon is in charge of the health of the school, and a commodious hospital, with resident assistant-surgeon and nurse, is provided in the grounds.



La Martinière College, Lucknow.

Besides the educational and physical advantages offered by residence at La Martinière College, there are many material advantages to be gained by successful students. The scholarships awarded in the institution are greater in number and value than those of any other institution in India. They range from Rs. 50 to Rs. 60 per month in value, tenable for the whole three years' course at Roorkee; and there are others, of varying smaller amounts. They are not available, however, for any boy who takes a place lower than fifth on the list, or for residents of less than three years standing. An additional sum of Rs. 88,300 was recently set aside by the trustees for providing additional scholarships, and the school is now very handsomely provided in this respect. Turning out a particularly virile class of young men, La Martinière has had great success in the engineering department. The course at the school is specially adapted to fit in with the Roorkee curriculum, and it has passed 285 boys into Roorkee, 159 into the Engineer Department, and 126 into the Upper Subordinate (Civil Engineer) Department. On the English Entrance list the school has taken the highest place seventeen times. It has won nine times the Council of India prize of Rs. 1,000, for general efficiency; also twenty-one gold medals and many silver medals in the final examinations for the Public Works Department. The Martinière boys have been consistently successful at these examinations, though pitted against B. A.'s and M. A.'s from the Indian Universities. In one year they took the nine highest places on the lists, and on several other occasions the Martinière has supplied the six leading candidates. The general excellence of the Martinière education, added to Roorkee training, ensures employment for even those exhibitioners who fail to secure the guaranteed Government appointments. In this department of engineering, the school maintains a prominent position among Indian institutions.

Mr. T. G. SYKES, B.A., Principal, La Martinière College, Lucknow, was born at Holyhead in 1844, and was educated at Woodhouse Grove School (where it may be mentioned the Right Hon'ble Sir Henry Fowler, G.C.S.I., late Secretary of State for India, and Sir Lawson Walton, K.C., the late Attorney-General, were educated) and the London University, where he took his degree with honours. Mr. Sykes obtained his experience as a master at English and Indian schools, before he was appointed head master of the Lucknow Martinière. Subsequently, he obtained his present appointment of Principal to the same institution on 1st March 1880. For the past twenty-seven years Mr. Sykes has entirely identified himself with the Martinière College, and the whole system, as it at present stands, is a tribute to his admirable powers



Mr. T. G. SYKES.

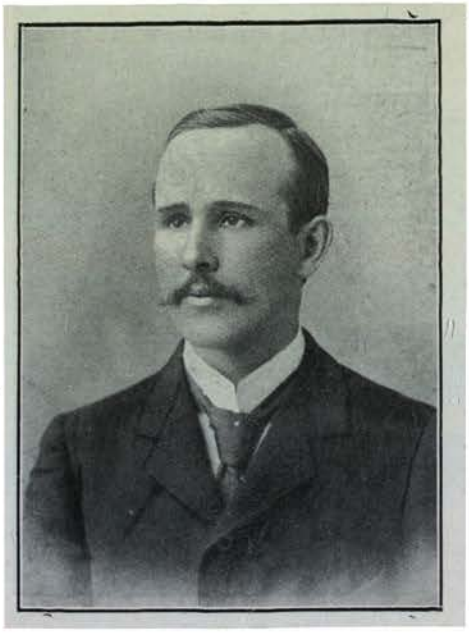
of administration and organization. Mr. Sykes's energies have brought the College to the forefront in India. He has imbued the institution with the spirit of an English public school, with the happiest results. Like all great head masters, Mr. Sykes is more than a mere teacher and disciplinarian. He has the faculty that enables him to bring to the surface all that is best in the nature of a boy committed to his care, and to educate his charges into men, in a wider sense than that implied by the mere acquisition of scholastic knowledge. In 1905, the Lucknow Martinière had the honour of a visit from Lord Curzon, then Viceroy of India, and on that occasion His Excellency complimented Mr. Sykes on his long and successful life-work, which, he added, was known and noted by the Government of India. Mr. Sykes is still in the prime of vigour, notwithstanding his long and arduous services, and gives every evidence of a long continuance of these abilities and faculties that have made the Lucknow Martinière the leading school of India.

The other masters of La Martinière College are: T. R. Read, M.A., Head Master; A. E. Pierpoint, B.Sc., First Assistant Master; C. L. S. Garnett, B.A., Second Assistant Master; E. Clarke, Inter B.A., Third Assistant Master; J. Spence, Fourth Assistant Master; T. G. Gill, T. De Gruyther, H. Lyon, E. G. Cooper, Music and Singing Masters. The Trustees are: Sir H. H. Risley, C.S.I., K.C.I.E., Secretary to the Government of India in the Home Department, and C. H. Kesteven, Esq., Solicitor to the Government of India. The Hon'ble Sir John Hewett, K.C.S.I., C.I.E., Lieutenant-Governor, United Provinces of Agra and Oudh, is the Visitor. The Local Committee of Governors consists of Major-General Sir E. Locke Elliot, K.C.B., D.S.O.; Ross Scott, Esq.; A. L. Saunders, Esq.; S. H. Butler, C.I.E.; T. G. Sykes, *ex-officio* Member and Secretary.

La MARTINIÈRE GIRLS' HIGH SCHOOL, Lucknow. This school, which is the companion institution of La Martinière College at Lucknow, though not originally provided for in the will of the founder, General Martin, came into existence in consequence of one of its provisions. General Martin had bequeathed certain monies to be set apart, and the income therefrom used for the release of poor debtors in India. In 1865 it was found that, in consequence of the alteration in the law regarding the imprisonment of debtors, a large sum of money had accumulated, and as the original purpose of the fund no longer existed, the Trustees and Governors of the General Martin Fund decided to devote a portion of these accumulations to the establishment of a Girls' School at Lucknow. At that time there existed a small girls' school at Lucknow, known as "Colonel Abbott's School", which

had been founded in 1859. This was taken over and formed the nucleus of the existing institution. At first the school was located in the Moti Mahal, a collection of buildings on the banks of the Gumti, but in 1871 it was transferred to the Khurshaed Munzil, on the opposite bank of the river. In 1876, the local Government made the Trustees a munificent gift of the buildings of the Khurshaed Munzil, and in 1888 supplemented this donation with a large grant of adjoining land. The school is thus well isolated. The original building of the Khurshaed Munzil at the time of the Mutiny was large and two-storeyed, surrounded by a deep moat. It was occupied by the rebels at the siege of the Lucknow Residency, but was re-captured, after six hours' hard fighting, on 17th November 1857. A pillar in the present compound of the Girls' School commemorates the spot where those famous heroes, Generals Outram, Havelock, and Sir Colin Campbell, met, on the day of the storming of the Khurshaed Munzil, to arrange future plans. A new building in addition has been erected by the Trustees. This is a handsome modern edifice provided with very fine dormitories on the upper floor, the lower floor being devoted to class rooms and music rooms. The music rooms are isolated. The old and new buildings are connected by a covered way, which affords safe passage in the rains and hot weather, as well as a delightful playground for the girls. The education afforded to the girl students is first class in every respect. They are trained for entrance into all the professions that are open to women. Large numbers of the students enter the medical profession or qualify as trained nurses, and some proceed to England to study for higher examinations. Many also qualify as teachers. The report of the Inspector of Schools supports the high reputation the institution has gained. "It is an admirable school, admirably conducted," says the report. "It has had a thoroughly successful year, and in the last public examinations did extremely well. It passed all its High School candidates, and passed six out of nine in the Middle School Examination, with three in the first division. The staff have worked splendidly, and deserve great credit for bringing on all their girls so well. But while the examinations have been worked for, the wider interests of education have also been kept well in view." It is noteworthy that the physical, as well as the mental, welfare of the girls is thoroughly taken care of, and there are no healthier, happier, or more intelligent children in the country than the girls of the Lucknow Martinière.

The MEDICAL SCHOOL, Agra, was first opened in the year 1854, by James Thomason, who was at that time Lieutenant-Governor of the North-West Provinces. At the outset, the institution consisted merely of a small dispensary with a few students. In the year 1890 large surgical wards were added, and, later on, the Dufferin Hospital was also attached. In the year 1904 the new Lady Lyall Hospital for Women was opened, and the old Dufferin Hospital was then converted into an Ophthalmic Hospital. At present, the Lady Lyall Hospital has accommodation for 70 patients. There are 12 purdah wards for native ladies of the better class, and 4 wards for Europeans. There is also a school for female hospital assistants, of whom there are at present seventy, the majority of them being accommodated in the Government Boarding House. The Ophthalmic Hospital has 100 beds, and over 900 operations for cataract are annually performed, and over 30,000 out-patients are treated. The Male Medical School has extensive grounds and buildings, a fine dissecting room, a marble-floored theatre, a practical pathological laboratory, and a fine examination hall. There are 280 students at present on the rolls, and they receive their instruction through the medium of lectures given in the vernacular. As most of the students have now some knowledge of English, it is hoped that before long the lectures will be delivered in this language. The staff consists of a Principal and seven Assistant Surgeons, of English and Indian University qualifications. In the Out-door Patient Department, from two to three hundred patients are treated daily, and from 70 to 80 surgical cases are constantly under treatment. There is a European ward with accommodation for six Europeans, and eight private wards for the better class of natives. The Principal of the School is Major Gordon Travers Birdwood, M.A., M.D. (Camb.), M.R.C.S., L.R.C.P., D.P.H., I.M.S. He was born in the year 1867 at Wadhwan in India, and was educated at Clifton and St. Peter's College, Cambridge. He afterwards joined Guy's Hospital, London. He was Clinical Assistant at Guy's Hospital, Westminster Ophthalmic Hospital, and Great Ormond Street Hospital for Children. After passing his examinations he entered the Indian Medical Service in 1893, and was posted on field service with the Abor Expedition the same year, when his services were specially mentioned in despatches. In the Waziristan Expedition of 1894 he received a Medal and Clasp, and in the Tirah Expedition of 1897 he received a Medal and two Clasps. He entered the Civil Department in 1898, and was appointed successively Civil Surgeon of Ghazipur, Muttra and Agra, in the United Provinces. He also acted as a Deputy Sanitary Commissioner for a short period, and was a member of the "Malaria" Commission at Nagpur in the year 1901. At present he is a Civil Surgeon at Agra and the Principal of the Agra Medical School. He is



Major G. T. BIRDWOOD.

a member of the British Medical Association, and a Fellow of the British Institute of Public Health, and has made several contributions to medical literature.

The MEERUT COLLEGE, United Provinces, was established in 1892 with the principal object of imparting education to the natives of the district. It had, for some years, a very chequered career, but under the new scheme recently arrived at with Government, it bids fair to become one of the important colleges of Northern India. In addition to a Government grant and its endowments, it receives large grants from the District Boards of the Division, and the Meerut Municipality.

The erection of the new College is now in progress, from plans by W. Gunnell Wood, Esq., P. W. D., and the old building will be converted into a set of up-to-date laboratories for science. The grounds are extensive, occupying nearly 40 acres, which will be laid out as a large park with portions reserved for tennis, cricket, hockey, and other games. There are fine boarding-houses for both Hindus and Mahomedans, a feature of which is the religious and moral instruction conveyed by the superintendents, who are the senior Pundit and Moulvi, respectively.

The College prepares students for the B. A., B. Sc. and LL. B. degrees of the Allahabad University.

In the grounds there stands the new Government High School, one of the "model" schools of the Province, to which a member of the Imperial Educational Service is to be appointed as head master.

Mr. WILLIAM JESSE (*Captain, Lucknow Volunteer Rifles*), Principal of the Meerut College, was born in England in 1870, and was educated at Hereford and Selwyn College, Cambridge, where he took his B. A. degree in Natural Science in 1891, and his M. A. in 1901. For three years he served as one of the Senior Science and Modern Language masters in Bedford Modern School, and came to India in 1894 as first assistant master at the La Martinière College, Lucknow; this post he held till 1903, when he resigned to accept the appointment of Principal of the Meerut College, which he has succeeded in raising out of the moribund condition in which it then was.

In literature, he has contributed a considerable number of papers on Indian Ornithology to various Indian and English journals, and has also edited "Morris' Geometrical Drawing" for Indian students.

Mr. WILLIAM JESSE.

Mr. Jesse is a Fellow of the Allahabad University, and of the Zoological Society of London: he is a member of the British Ornithological Union, of the Bombay Natural History Society, and of the Incorporated Society of Authors, London. He is a Captain in the Lucknow Volunteer Rifles, and while at Lucknow commanded the senior La Martinière Company, which in 1857 held the Martinière Post during the famous siege of the Residency.

The *late* Dr. MAHENDRA LAL SIRCAR, C.I.E., M.D., D.L., was born in Paikpara (Howrah, Bengal), on the 2nd November 1833. He comes from the famous Sircar family of Arandi (Hughli). His father, Ram Tarak, had only two sons, the eldest being Mahendra Lal. Having lost both his parents at an early age, he was brought up in his maternal uncle's house at Nebutola, Calcutta. He obtained the rudiments of his English education under the celebrated lame teacher, Thakur Das De, generally known as Master Mahasaya. At the age of seven he was admitted into the Hare School, and in 1850 he obtained a Junior Scholarship, and then studied in the Hindu (Presidency) College, where he soon distinguished himself. He entered the Medical College in 1855, and his career there was a brilliant one; he was first in the M. D. examination, 1863. Before the Bengal Branch of the British Medical Association, of which he was Secretary and Vice-President, he early denounced Homœopathy as a system of quackery. Subsequently his opinions changed and he read an address at the fourth annual meeting of the Association in 1867, in which he alluded to several cures by homœopathic method of treatment and urged upon the profession the necessity of recognizing it as one of the therapeutic systems. For this declaration of faith in homœopathy he was outcasted. He started the *Calcutta Journal of Medicine* in 1868 to ventilate his own views in medicine, and he conducted it to the end of his life.

In August 1869, he advocated in his journal the establishment of a National Institution for the Cultivation of Science. The article was well received by the press and subscriptions began to flow in. In

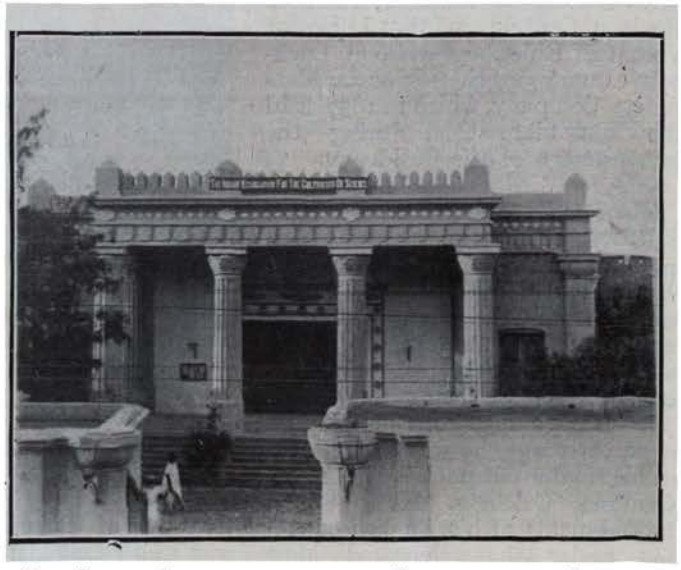
The late Dr. M. L. SIRCAR, C.I.E., M.D., D.L.

1876, with the voluntary help of Sir Richard Temple, the then Lieutenant-Governor of Bengal, the in-

Dr. A. L. SIRCAR, F.C.S.

augural meeting took place, and the institution was called the Indian Association for the Cultivation of Science. He lectured on various scientific subjects regularly from its foundation till 1896, when his health broke down. Lord Ripon laid the foundation-stone of the Lecture Hall in 1882. The Maharaja of Vizianagram bore the whole cost of the laboratory building, and the foundation-stone of the Vizianagram Laboratory was laid by Lord Lansdowne in 1890. The Association is now a well-established and well-equipped institution. It has great facilities for research work. Ever since its foundation it has had for its Patron the Viceroy and Governor-General of India, and as President, the Lieutenant-Governor of Bengal. The Association is on the lines of the Royal Institution of England and is a deserving institution. It has been doing real work. Since the death of Dr. Sircar, the Founder-Secretary, the institution has had for its secretary Dr. Amrita Lal Sircar who, like his father, has been devoting his whole time, attention, and energy for the furtherance of its objects. Much practical work has been taken in hand by him, and an astronomical observatory is under construction. Sir William Ramsay visited the Association in 1901, and more recently it was visited by Dr. M. W. Travers, Director of the Tata Institute. These gentlemen expressed their high opinion regarding the working of the institution.

The late Dr. Sircar was a Fellow of the Calcutta University; Honorary Magistrate, 1877-1902; Sheriff of Calcutta, 1887; Member of the Bengal Legislative Council, 1887-1893. He was the first Indian medical man who obtained these high places of honour. He was a Commissioner of the Calcutta Corporation for many years, and his services on the Municipal Board as a medical man were invaluable. He was made a Doctor of Law in 1898. For ten successive years he was a member of the Syndicate, and for four successive years, President of the Faculty of Arts. He was a member of the Council of the Asiatic Society and a Trustee of the Indian Museum. He was created a C. I. E. in 1883, in recognition of his services to science. He bore the entire cost of the building of the Leper Asylum at Baidyanath-Deoghur, which goes by the name of his wife as Raj Kumari Leper Asylum.



THE INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE.

The late Dr. Sircar was an eloquent speaker. He was an advanced Liberal, but never virulently attacked Government measures. He had a firm belief in the Divine Government of the world. His life had been one of consistent toil for science and his fellow countrymen. His treatises on *Cholera* and *Plague* are among the best books on the subjects. All his writings, scientific and medical, appeared in his own Journal. He died on the 23rd February, 1904.

St. GEORGE'S COLLEGE, Manor House, Mussoorie, U. P., India. Now one of the largest and most important of the Colleges for Europeans in India, St. George's College, Manor House, Mussoorie, like other unendowed institutions, took years to realize its present stately proportions. Principal after Principal generously contributed his quota to the work of progress; and, thanks to their efforts, the College, although it is still far from being completed, can boast of being the largest educational establishment in Mussoorie. The College, which is under the patronage of His Lordship the Most Reverend Dr. Gentilli, O.C., Archbishop of Agra, was founded as far back as 1854, by Bishop Persico. The Rev. Father Barry was the first Principal of Manor House, which was in those early days nothing more than a bungalow. The Capuchin Fathers, Brady, Mackin, Ildephonsus, Amelius, Lewis, Julius, and Doogan were the Principals, in order of time, down to as late as 1893, when the reins of government were transferred to the Patrician Brothers, under whose able guidance the Institution has prospered ever since.

It would not be in keeping with the scope of this article to enter into details concerning the labours of the many Principals that have guided the destinies of Manor House ever since its humble beginnings. We feel bound, however, to pay the last of the Capuchin Principals, the Rev. James Doogan, more than a passing tribute. This great Irishman, deep-

ly revered and beloved by all old Manorites, did great things for Manor House. But though he sleeps among the mountains in far Chakrata, "Doogan's School," that standing memorial of his zeal and of his love, will not let him die; and Manorites shall ever cherish his memory as dear to them as their very heart-strings.

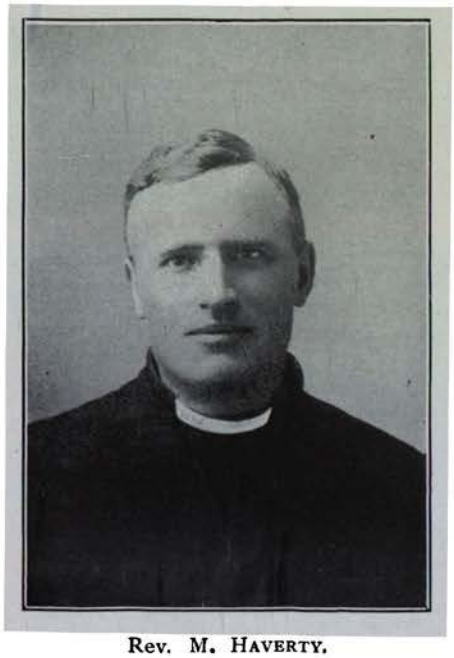
The present worthy Principal, the Very Rev. M. Haverty, O.S.P., resembles his illustrious predecessor in many respects; but the living are enemies to praise, so we refrain.

Perched on an isolated spur, midway between Rajpur, the gate to Mussoorie, and Mussoorie Station, the climate of which is perfect, the College is, for educational purposes, ideally situated. Remote from "the madding crowd's ignoble strife," the student can "sit and think" at peace. The capacious recreation grounds in the College estate, and the number and variety of the games indulged in, guarantee the desideratum: *mens sana in corpore sano.* The College can comfortably accommodate about 200 boarders; and the average attendance during the academic year is rarely below these figures; besides several day scholars whose friends reside in the station.

As it would be tedious to enter into minutiæ concerning the College structure, a few general items must suffice. Each of the various departments has its allotted study-hall and class-rooms. Three large airy dormitories accommodate the boarders; many of the senior students enjoy separate rooms. The Aula Maxima, which serves as an ambulacrum during the hot and rainy seasons, has a stage attached to it, where the College theatricals are held, and where from time to time lectures and entertainments are given by members of the staff, and by persons visiting Mussoorie. As this is but a crude sketch, further information may be had in the College prospectuses, and in the Manor House Xmas Annual which is composed, for the most part, by old Manorites, and by the students themselves.

The staff, which is large and thoroughly efficient, is composed of men most of whom are directly out from Home. Men that graduate in Europe conduct the College special departments.

For an Indian career, St. George's College offers to the public all that may be required. It is an old-established school, and has given proof of being a first class educational institution. The curriculum is arranged so as to include the requirements of the various ages, from the toddler of four summers to the young gentleman out of his teens. Students are prepared for Government standards, Forest, Survey, Police, Opium, F. A. and the Entrances of the Calcutta and the Allahabad Universities, Superior Grade Accounts, Fourth Grade Accounts, and the Roorkee Upper Subordinate and Engineering Examinations. Students are also prepared



Rev. M. HAVERTY.

for the Oxford and Cambridge Entrances, the Dublin University Entrance, the City and Guild of London Technical College Entrance Examination, Entrance, Royal College of Surgeons, London, Edinburgh and Dublin, Superior Grade Police, Home Examinations, Army Preliminary, University, and Preparatory Civil Service Examinations.

These advantages are open to European students of every denomination, in consideration of a moderate payment. The diet of the College is very good, and there is plenty of it.

Every attention is paid to the morals of the pupils. Everywhere the mottoes, "*virtus et labor*" and "*labor omnia vincit,*" stare them in the face, and proclaim the sacredness of virtue and of manly toil. The aim of the institution is to so fashion and mould the characters of its numerous alumni that they may hereafter become good Christians and useful members of society. The means resorted to, to secure these noble ends is not severity, but kindness. The religion of the Protestant pupils is not interfered with. They say their prayers apart from the Catholic pupils.

The hygiene of the College is scrupulously attended to, and, as a result, the annual medical reports of the doctor in charge—usually the Civil Surgeon of the station—are most satisfactory. Two qualified matrons are always in attendance to administer to the comforts of all, and to see that the household affairs are properly attended to in the various departments.

The games include cricket, football, hockey, and tennis; and it is notorious that St. George's secures the lion's share at the annual athletic sports held in Mussoorie. Volunteering is a specialty with Manorites, and the results up to date may compare favourably with those of any other institution in India. For instance, St. George's has secured the All India Cadet Challenge Cup, which was competed for, for the first time in 1905.

It would be difficult to estimate the value of the work done by St. George's College for the Anglo-Indian. But he appreciates the worth of its labours in his behalf, and its brilliant results, and always loves to style himself "An old Manorite."

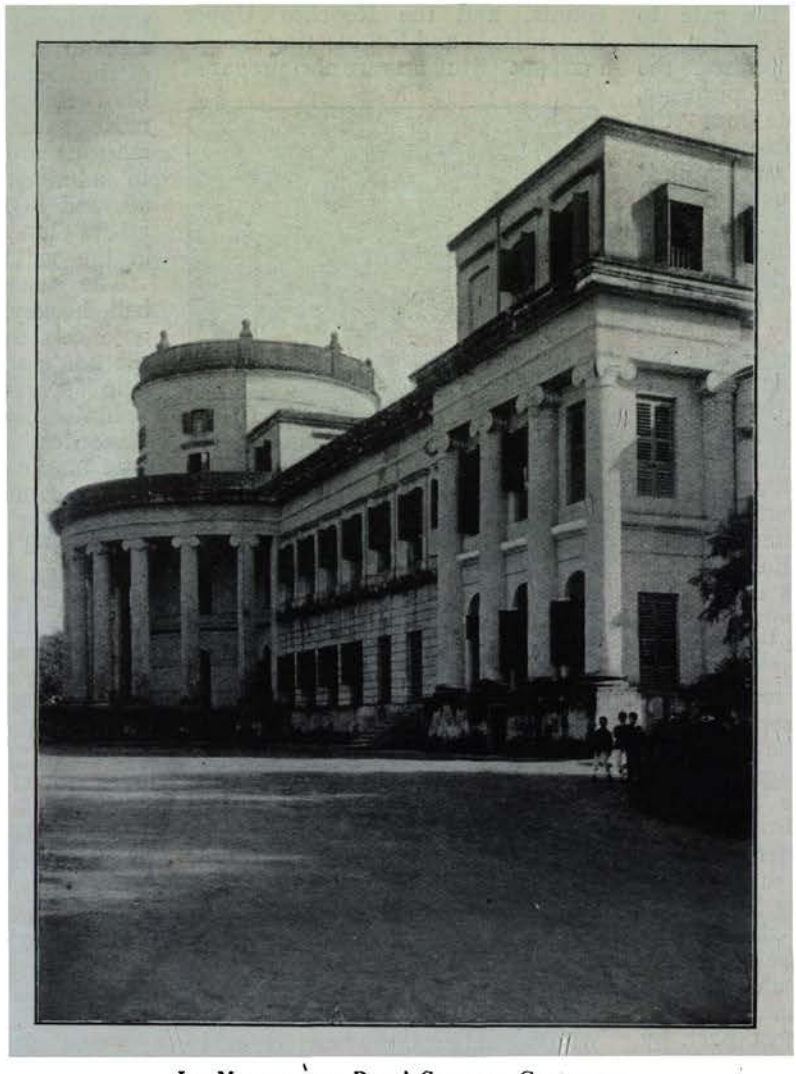
The College, which is affiliated to the Calcutta and Allahabad Universities, receives annually a large Government grant.

It reopens 1st March (10th January for College Department) and closes on the 15th December each year.

Rev. EDWARD MONTAGU WHEELER, M.A., was born at Cawnpore in 1868, and is a grandson of the late Rev. Dr. K. M. Banerjea, C.I.E., D.L. He was educated at La Martinière, Calcutta, St. Paul's School, Darjeeling, and Presidency College, Calcutta, from which last-named College he graduated in 1886,

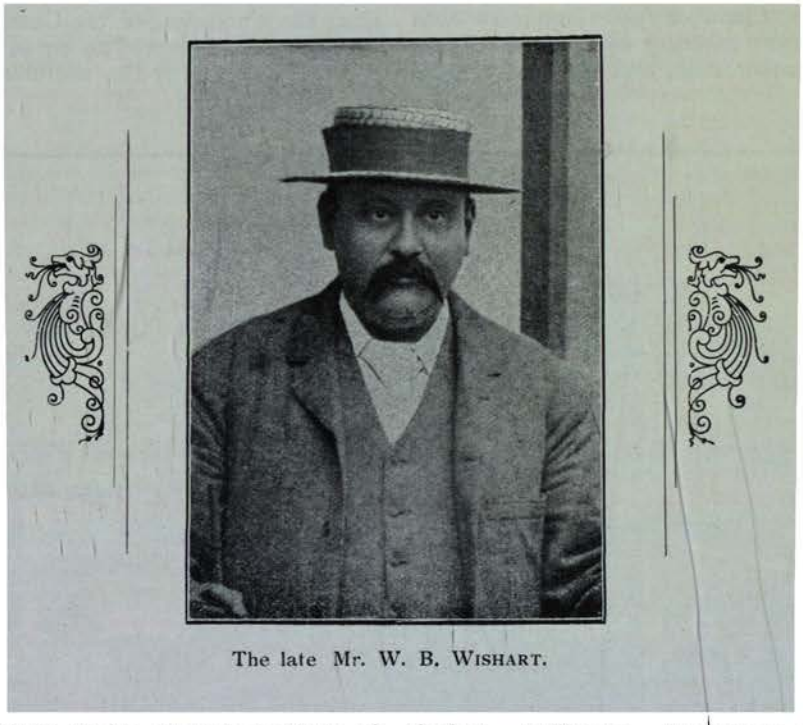
obtaining a double first class. He proceeded to M. A. in 1889, obtaining a First Class and a University Gold Medal. In 1891 he won the Premchand Roychand Studentship of Calcutta University, and was Mouat medallist for the year. He was tutor of Bishop's College, Calcutta, from 1886 to 1898, Assistant Professor of Philosophy at Hughli College from 1890 to 1892, Professor of English Literature and Philosophy at Bangabasi College, Calcutta, from 1899 to 1905, Head Master of Calcutta Free School during 1905, and early in 1907 was appointed Principal of Krishnath College, Berhampore, Bengal, which post he still holds. He is a Municipal Commissioner of the Berhampore Municipality, President of the local Water-Works Committee, and Honorary Organiser of Credit Co-operative Societies in the District of Murshidabad. He has been a Fellow of Calcutta University since 1896, and was a member of the Provisional Syndicate elected under the new University Regulations. He was ordained Deacon in 1898, and served for some time as Assistant Curate at St. Thomas's Church, Free School Street, Calcutta. He has also served a term as Honorary Magistrate at Sealdah. He acted for some time as Honorary Secretary of the Calcutta University Teachers' Association, which he helped to found.

Mr. Wheeler married his cousin Miss Irene Sells, in 1905.



LA MARTINIÈRE BOYS' SCHOOL, CALCUTTA.

The Upper India Chamber of Commerce.



The late Mr. W. B. WISHART.

THE rise of Cawnpore to its present position of importance as a great centre of manufacturing industries dates from nearly 50 years ago. Trade may be said to have had its beginnings in the interchange of merchandise between the North-Western Provinces and the then independent kingdom of Oudh. The creation of a military cantonment led to a considerable extension of the town, and largely helped to augment the population by drawing to it the large train of followers, caterers and motley hangers-on that invariably settle down in a garrison town.

But the chief factor which operated in developing Cawnpore (itself in the midst of the fertile Ganges-Jumna Doab) into a great centre for the collection and distribution of the trade of the North-Western Provinces has been the establishment of through and unbroken railway communication with Bengal, and, later, with Bombay. The result of the bridging of the Jumna at Allahabad was to divert to Cawnpore the large traffic in country produce and imported goods, which had formerly been transported, through various towns on the Ganges and Jumna, to and from Mirzapore, then in its heyday of prosperity. Under these changed conditions, many of the wealthy merchants and mahajans of Mirzapore and other towns on the Ganges and Jumna opened out branch establishments at, or transferred their whole business to, Cawnpore; they in turn being followed by a contingent of petty dealers, craftsmen, tradesmen and the like, who contribute so largely to the making up of big populations in Indian towns.

A further stimulus was given to commercial progress by the strong demand that suddenly arose for cotton from countries other than the United States, on the outbreak of the War of Secession in that country and the blockading of the Southern ports; and out of which grew not only the present large export trade of India in cotton, but the invaluable indigenous steam cotton weaving and spinning industry.

The mercantile and industrial importance of Cawnpore was subsequently greatly enhanced by the five great railway systems which now converge on it—the East Indian Railway, O. & R. Railway and the Bengal and North-Western Railway from the East and North, and the B. B. and C. I. and G. I. P. Lines from the West and South.

The manufacturing enterprise of Cawnpore may be said to have been inaugurated by the erection of the Government Harness and Saddlery Factory (now ruled by Major E. S. Forrestier Walker); this site having been selected for its central position as a market for obtaining raw materials, and for its abundant supply of cheap labour available in the large *chamar* population of the district.

Its industries comprise leather manufactures, cotton, wool, sugar, flour, brushes, cotton ginning, and engineering shops and foundries.

It has been the fortunate lot of Cawnpore to rank as the first city outside the Presidency towns to secure the amenities of electric tramways and lighting, the Indian Electric Supply and Traction Co., Ld., which was launched in London in 1905, having obtained concessions from the local authorities for a tramway system combined with a lighting and power supply scheme. The Company have for their local agents the old established house of Messrs. Begg, Sutherland & Co.

The Upper India Chamber of Commerce was organized at a preliminary meeting of local merchants held on the 12th September 1888, and the first general meeting took place on 17th January 1889. Mr. W. E. Cooper (now Sir William Cooper, *Kt.*, C.I.E.) occupied the chair, delivered the inaugural address, and was elected as President, Mr. A. S. B. Chapman being elected Vice-President, Messrs. J. Harwood, A. McRobert, J. Tate and E. C. Ball, as members of the Committee, and the late Mr. W. B. Wishart, Secretary.

The Chamber was inaugurated with a membership of 22, which has now been increased to 49.

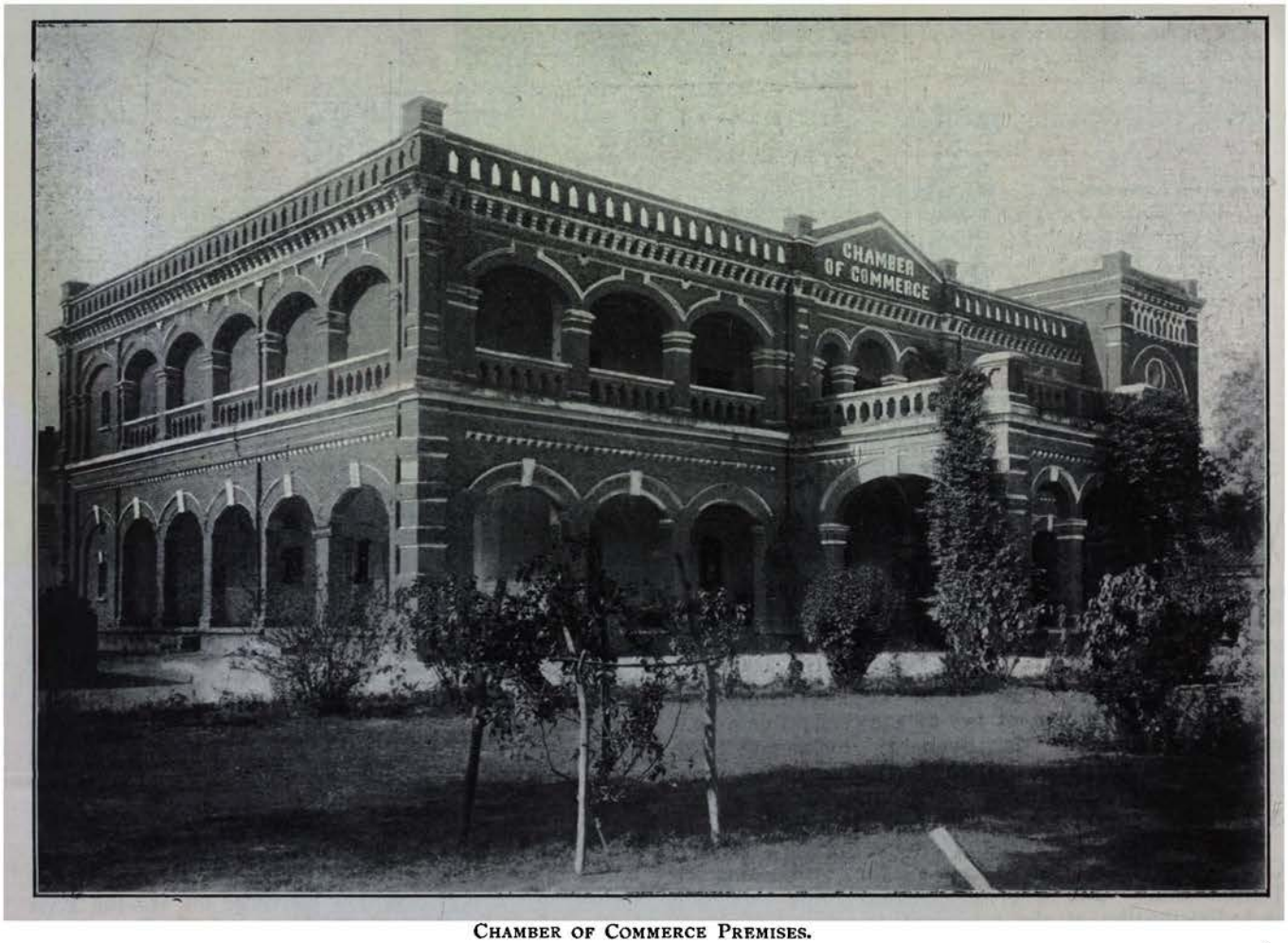
Sir W. Cooper was President of the Chamber for nine years, and was succeeded by the Hon'ble Mr. A. McRobert, who has filled the chair for seven years, and Mr. S. M. Johnson and Mr. T. E. Strachey have each officiated during one session.

Mr. W. B. Wishart retained the office of Secretary until his death in 1904, and was succeeded by the present Secretary, Mr. A. B. Shakespear, who had previously held the office of Assistant Secretary, which has now devolved on Mr. A. D. Pickford.

Mr. Wishart had held his appointment continuously since the foundation of the Chamber, fifteen years previously, and had exerted an important influence in extending and developing the usefulness of the Chamber for the advancement and promotion of the mercantile interests of Upper India, and in earning for the Chamber the confidence of Government as an adviser on commercial matters.

As a mark of the Committee's appreciation of Mr. Wishart's services to the Chamber, it has been arranged to place his portrait in the Chamber's Hall, so that his memory will be kept green.

In 1894 the new building of the Chamber was completed; the necessary sum of money having been raised by contributions.



CHAMBER OF COMMERCE PREMISES.

As to the work done by the Chamber, space will not admit of more than a brief outline, and the following are some of the more important matters which have engaged its special attention.

The schemes for an improved water-supply and improved drainage in Cawnpore ; the former has been completed, the latter only partially carried out. The Chamber has, since its formation, taken a keen interest in all measures tending to promote the health of the cities of these provinces.

The Chamber has systematically opposed all oppressive forms of taxation. It has been the means of introducing into Cawnpore the "terminal tax" in substitution of Octroi, a light cess of from ¼ to ¾ annas per maund on the trade of the town, which has provided ways and means for the financing and maintenance of the Drainage and Water-Works schemes. The practice of levying income-tax on profits on consignments in India has also been condemned ; and the Chamber has urged the reconsideration of the whole question of the continuance of the income-tax. The excise duty on locally mill-manufactured piece-goods has been protested against. A firm stand has been made against unnecessary and uncalled-for restrictions being placed on factory labour. The Chamber has steadfastly advocated that a greater measure of State encouragement be extended to private enterprise, by Government relying less on the Stores Department of the India Office and by curtailing the competition of Jail industries.

A liberal policy in regard to railway development has been advocated, and also the prosecution of the following projects :—The linking up of the narrow-gauge systems of railway, east and west, and in this connection the bridging of the Gogra and Kosi rivers ; access to Calcutta for the metre-gauge; the opening out of the Palamow and Daltongunj coalfields, and direct broad-gauge railway communication between Calcutta and Karachi.

The Chamber has also been particularly identified with the following questions :—The re-imposition of the cotton import duties; the undue disparity between Owner's risk and Railway risk rates of freight on railways. In the matter of Currency it has been maintained that Government should accept the principle of making currency notes as far as possible, and gold and silver coin absolutely, freely interchangeable.

The Chamber has also been instrumental in obtaining large reductions in coal freights from Bengal to the Upper Provinces ; and has helped in securing further concessions in the Postal and Telegraphic services, foreign and inland.

THE OBJECTS OF THE CHAMBER.

The chief aims and duties of the Chamber are to promote and protect the general commercial interests of the United Provinces of Agra and Oudh ; to encourage a friendly feeling and unanimity among mercantile men on all subjects involving their common good ; to act as a medium of communication with Government ; and to receive references from, and arbitrate between, parties willing to abide by the decision of the Chamber, etc., etc.

PRINCIPAL EXPORTS FROM, AND IMPORTS INTO, CAWNPORE BY RAIL FROM 1894 TO 1905.

EXPORTS.

Year.	Cotton, Raw.	Cotton Manufactures.	Hides and Skins.	Wheat, Rice and other food-grains and pulses.	Oilseeds.	Sugar.
	Maunds.	Maunds.	Maunds.	Maunds.	Maunds.	Maunds.
1894	1,74,709	4,84,358	1,09,362	11,68,803	4,79,387	3,47,506
1895	2,63,198	4,28,966	2,34,534	10,67,461	1,52,325	2,68,636
1896	3,04,155	4,68,805	1,54,300	6,45,247	4,46,067	3,19,483
1897	2,38,155	3,87,743	2,03,556	7,71,020	7,51,841	3,18,133
1898	1,58,457	5,00,701	1,21,707	11,05,806	10,64,642	3,47,486
1899	93,428	4,81,625	3,07,756	23,92,828	6,07,118	3,10,234
1900	1,13,213	5,38,719	3,56,791	32,69,316	6,83,586	3,87,054
1901	1,65,926	7,99,280	1,55,756	14,62,100	3,04,032	3,49,171
1902	2,27,777	7,04,800	1,21,278	15,34,189	4,71,875	3,55,641
1903	1,56,811	8,05,597	1,35,468	11,55,931	8,65,613	2,74,487
1904	96,983	7,29,489	2,25,000	11,95,196	8,17,067	2,55,162
1905	2,22,603	7,35,445	2,95,075	7,47,560	2,74,156	3,23,562
1906	2,54,229	8,03,829	4,20,892	10,73,230	4,90,653	3,31,284

IMPORTS.

Year.	Sugar.	Cotton, Raw.	Cotton Manufactures.	Coal & Coke.	Hides & Skins.	Oil seeds.	Wheat, Rice, Pulses and Gram.
	Maunds.	Maunds.	Maunds.	Maunds.	Maunds.	Maunds.	Maunds.
1894	4,40,025	2,99,877	4,19,913	9,47,936	1,90,677	2,77,880	21,43,857
1895	3,62,134	3,75,550	3,44,823	11,03,119	30,256	1,50,701	24,85,904
1896	5,32,577	4,57,345	3,53,868	10,13,935	2,53,568	1,96,929	16,37,062
1897	3,69,160	3,19,674	3,95,730	11,43,418	2,78,069	2,84,379	16,82,889
1898	4,17,083	3,73,762	5,21,599	13,19,340	2,38,405	3,11,354	7,74,006
1899	2,67,643	4,01,712	5,19,559	13,98,033	4,90,908	1,78,132	14,63,036
1900	4,34,009	3,23,805	4,65,530	13,72,867	7,92,062	2,09,630	14,77,693
1901	6,89,744	3,74,891	6,31,486	12,32,194	2,76,874	1,76,326	19,06,931
1902	5,66,629	3,57,158	5,11,121	13,28,988	1,90,169	2,79,704	12,04,492
1903	4,63,050	2,77,309	5,06,968	12,03,765	1,97,771	1,60,155	12,73,663
1904	5,47,074	2,58,654	5,00,809	13,37,921	2,44,436	1,22,788	8,78,924
1905	5,55,154	4,34,786	4,81,764	10,50,671	2,86,966	98,574	17,92,921
1906	4,86,821	3,57,955	4,51,575	10,12,522	3,71,758	1,79,660	20,09,200

The Tea Industry of India:

Its Rise and Progress.

It was in 1780, when Warren Hastings was Governor-General, that Colonel Kyd, one of the earliest of Indian botanists, first planted tea seeds in the garden of his house near Calcutta. The existence of the indigenous plant in India was then unknown. Colonel Kyd received his seed from China. It was brought to him by the East India Company's vessels plying between Calcutta and Canton. The Company had determined, at the instance of the British Government, to make some experiments in tea cultivation in India. These experiments they entrusted to Colonel Kyd. Under his care the bushes flourished, notwithstanding the unfavourable climate. He reported the results to Sir Joseph Banks, who prepared a memorandum on the subject for the Governor-General. Sir Joseph suggested that the cultivation of tea should be seriously undertaken; and he mentioned Behar and Kuch Behar as districts where the bushes would be likely to thrive. From China in 1793 he sent plants and seeds to Calcutta. But the political difficulties which arose about that time kept the question in the background; and no immediate steps were taken to put his ideas into practice. There seems however to have been a feeling that an indigenous plant existed in the country. To decide definitely who actually discovered it is not easy. The records are conflicting: they have given rise to controversy; and opinions differ. What is clear is that between 1819 and 1825 the discovery was made. By some it is attributed to David Scott, who was the first Agent to the Governor-General in Assam. By others to one of the two brothers Bruce, who were Scott's contemporaries. In 1824, on the breaking out of the Burma War, C. A. Bruce was appointed by Scott to the command of a division of gunboats. His command was in Sadiya; and while there he is said to have sent specimens of the tea plant to Scott. He subsequently stated that he had been previously informed by his brother—Major R. Bruce—of the existence of the plant. On the other hand, it is asserted that Scott had sent specimens to Calcutta as early as 1821. There is doubt as to whether Scott was himself in Assam proper prior to 1824. On the other hand, it is an admitted fact that the Society of Arts awarded a medal to C. A. Bruce as being the discoverer of the plant. But whether the credit really belongs to the Bruces or to Scott, the fact remains that no immediate practical use was made of the discovery. The Scientific Adviser to Government at the time was Dr. Wallich, the Superintendent of the Calcutta Botanical Gardens. To him the plants and seeds were sent. But he was—as he afterwards admitted—sceptical as to whether the Assam shrub was really a *Thea*. He recognised it as a *Camellia;* but beyond that he was not prepared to go.

In due course Captain Jenkins succeeded Scott in the Commissionership of Assam. Jenkins is believed to have been previously interested in the tea question. He made investigations; and, aided by Lieut. Charlton, he re-discovered the plant. He forwarded botanical specimens to Wallich, who at a meeting of the Calcutta Horticultural Society held in December 1834, acknowledged that the plant was a genuine *Thea*. This was practically ten years after the original discovery by Scott and the Bruces. Lord William Bentinck was Governor-General at the time. The East India Company's monopoly of the China trade had come to an end in 1833. They had previously foreseen trouble in this connection, and were naturally anxious to obtain a new source of supply. Consequently they drew Lord William Bentinck's attention to the importance of introducing tea cultivation into India; and he announced his determination to do everything possible to acclimatise the best types of China plants. On the 24th January 1834 he appointed a "Committee for the "purpose of submitting a plan for "the accomplishment of the intro-"duction of tea culture in India, "and for the superintendence of its "execution." The Committee deputed G. J. Gordon, their Secretary, to China to investigate and to bring back specimens. But soon after his departure they learned of the rediscovery of the Assam plant by Jenkins and Charlton. They hastily recalled Gordon, but subsequently changed their minds, and deputed him to China a second time. In order that the Assam discovery might be thoroughly investigated, the Governor-General appointed Drs. Wallich, McClelland and Griffiths as a Commission to report upon it. The three travelled through Assam, and they agreed that a genuine *Thea* had at last been found. But they regarded it as a degenerated plant, and they recommended the importation of the cultivated species from China. They also reiterated the opinion—which had been previously expressed by other scientists—that the outermost ridges of the Western Himalayas would be the most suitable districts for tea cultivation. Dr. Wallich seems to have maintained this opinion, but the claims of Assam were eventually recognised by McClelland and Griffiths. Gordon brought plants and seeds with him on his return from China. The seeds were raised in the Calcutta Botanical Gardens; and in duo course the young plants were

sent, some to Assam, some to the Himalayan localities, and some to Madras. In the first and last named districts, the experiments were unsuccessful. But in the meantime other experiments in the cultivation of the indigenous plant had been initiated in Assam by Captain Jenkins. These were fostered by Dr. Griffiths, and eventually samples of genuine Assam tea were produced. In 1839 the Assam Company was formed in London, with a capital of nearly a quarter of a million sterling. It was by no means successful at first. For about ten years most of its experiments seem to have ended in disaster. In fact, at one time it was on the verge of liquidation. But gradually it strengthened its position. Its methods of cultivation and manufacture were reformed; and by about 1852 it began gradually to enter upon an era of prosperity. In the meantime other gardens were being opened out in all directions. By 1854 the exports of Indian tea to the United Kingdom amounted to 250,000 lb. In the following year the indigenous plant was discovered in Cachar; and in 1856 Mahomed Warish found it in South Sylhet. The Jorehaut Company—a most successful undertaking—was constituted in 1858. And from that date the tea industry of Assam may be said to have been fairly established.

It is now necessary to turn to those Himalayan localities, the claims of which as prospective tea-growing areas had been urged so strongly by Dr. Wallich. As has been already indicated, the balance of opinion in the early days of Indian tea favoured the Himalayas. Not Wallich only, but other scientists—Royle, Superintendent of the Government Gardens at Saharanpur, and Falconer his successor for instance—were inclined to that view. Their anticipations were not realised, although it is not untrue that the China varieties do flourish in the cool hill climate. Naturally, it was not foreseen that the strongly flavoured Assam indigenous teas would become popular with the consumer. There is therefore nothing surprising in the endeavour of the Government to produce teas precisely similar to those imported into the United Kingdom from China. Reference has been made to Gordon's mission to the latter country, and to the stock which he brought back with him. Apparently these plants did not suffice, for a further supply was called for. To obtain it Mr. Robert Fortune was deputed by the Government to China in 1848. He returned to Calcutta in 1851, with a large quantity of seed, and upwards of 20,000 plants. While in China he had studied methods of cultivation and manufacture. On his return he visited Dehra Dun and the Kangra Valley, and reported upon the plantations there. His report was unfavourable. The Government was disappointed at the non-success of their efforts; and, but for the persistency of Dr. Jameson, who had succeeded Falconer at the Saharanpur gardens, they would have terminated their experiments. For it was just about this time that the affairs of the Assam Company were at the lowest ebb; and the prospects of tea cultivation in India were gloomy indeed. But Lord Dalhousie visited Kangra in 1852. He permitted the experiments to be extended by the cultivation of Holta; and he allowed Fortune to undertake a second mission to China. On his return Fortune again reported on the Kangra and Dehra Dun gardens; and he was forced to admit that some of his previous strictures were not justified. In fact, he now went so far as to say that he had not seen better plantations in China. Nevertheless he still criticised, and for some time a somewhat acrimonious controversy proceeded between him and Jameson. To follow it is not now necessary. But it was probably not without its value, for it doubtless contributed—as did most of the disputes concerning tea—to greater precision of investigation, and hence ultimately to better methods of cultivation and manufacture.

It has been already remarked that by 1858 the industry was fairly established in Assam. In 1861 the Indian crop reached the respectable total of 1,400,000 lb, the bulk of which must have been produced in Assam. At about this time tea began to attract the attention of company promoters and speculators both in England and in India. The American Civil War was in progress; and fortunes were being made with unexampled rapidity in India. The success of the Assam and Jorehaut Companies, and of a few private gardens, enabled exaggerated pictures to be drawn of the prospects before concerns with large capital. Land was recklessly taken up. Companies were hastily formed. Almost every day saw the constitution of a new company in Calcutta. Shares rose to an extravagant premium. Land was easily obtained by speculators; for the stringent waste land rules introduced by Government in 1854 were to a certain extent relaxed in 1861. Some of the promoters endeavoured to clear and cultivate the land. But in many cases large clearances were made without any adequate provision for labour. In others there was not even an attempt at cultivation. Enterprising promoters found it to be more profitable to persuade shareholders to invest in gardens which did not exist. As for example in Nowgong, where the manager for a London speculator was instructed by the latter to clear and plant a certain area of waste land for delivery to a Company to whom it had been sold as a tea garden. The inevitable sequence of all this wild excitement followed speedily. By 1866 the bogus Companies were generally collapsing. A strong reaction against tea set in. Shareholders sold out in frantic haste. The mania was succeeded by a panic. Shares which had been forced up to a heavy premium fell to nominal values. In fact, the crisis became so acute that in 1868 the Government appointed a Commission to enquire into the state of the industry. The report of the Commission showed that the older gardens were generally flourishing. That is to say, in those cases where they had not been damaged by the influence of promoters. But as regards several of the new concerns, the Commission intimated that in the general interest they should be wound up. From this period the crisis passed slowly away. That a severe blow had been dealt to the industry

was evident; and considerable time elapsed before confidence was restored. But there was a gradual improvement; and by 1870 several new and ultimately prosperous concerns—the Brahmaputra Tea Co., Ld., and the Scottish Assam Tea Co., Ld., among them—had been formed.

In the meantime production had been advancing, despite the depression. From 1,600,000 lb. in 1862, the crop reached 8½ millions in 1867; and by 1870 it had risen to 13,300,000 lb. The progress which had been made in the different districts is well illustrated by the proportion which each of them contributed to this total. From Assam, *i.e.*, the Brahmaputra Valley, 6,400,000 lb were derived; from Cachar and Sylhet 4,600,000 lb; from Darjeeling, Kurseong, the Terai and the Dooars 1,700,000 lb; and from Kumaon, Kangra, and Dehra Dun 600,000 lb. Thus after about twenty years the Himalayan districts, of which so much was at one time expected, did not yield a crop of a million pounds. From 1870 to the present time the progress of the industry, so far as production is concerned, has been rapid. By 1880 an area of 208,492 acres was being cultivated; and the total yield was 41,925,025 lb. Ten years later the cultivated area reached 344,827 acres; and the yield 112,036,406 lb. The succeeding decade witnessed an even swifter advance. For by 1900 the area extended over 522,487 acres; and the production aggregated 197,460,664 lb. The latest figures—those for 1906—show that the area now under cultivation is 529,995 acres; and that the total yield is 240,849,894 lb. Assam is, of course, by far the most important of the producing districts. With a cultivated area of 340,481 acres and a yield of 162,468,034 lb, she is easily first. Jalpaiguri follows with an area of 83,347 acres and a yield of 44,602,885 lb. These two districts have been recently placed under one administration, as a consequence of the creation of the Province of Eastern Bengal and Assam. In other words, the new Province is responsible for the production and manufacture of more than 85 per cent. of the total Indian crop. This fact is a striking commentary on the belief entertained by the pioneers of the industry that tea could not be grown on the plains. The development of cultivation in Southern India has been marked, since it was commenced about twenty years ago in Travancore and Cochin; and the yield now reaches the very respectable figure of 14¼ mils. Of all the Indian tea districts the Himalayan districts in the United Provinces and the Punjab have exhibited the least tendency to expansion. At the present time their cultivated area is officially returned as 17,522 acres; and their production at 3,527,863 lb. But as a large number of the gardens are of very small extent, and are in the hands of native cultivators, these figures may not be absolutely reliable.

It has been already remarked that the United Kingdom has always been the principal market for Indian tea. Perhaps, therefore, it may be of interest to trace briefly the progress of the tea drinking habit in that country. What seems to be the earliest record of the importation of tea from China into England is an entry in the books of the East India Company in June 1664 of a present of 2 lb 2 oz. of *thea* having been made to the King (Charles II). The price was 40 shillings per lb. Two years later the Company made His Majesty a further present of 22¾ lb at 50 shillings a pound. By 1677 the Company seem to have secured a supply for commercial purposes. Prices ranged from £5 to £10 sterling per pound. A heavy import duty of 5 shillings per pound and 5 per cent. *ad valorem* was levied in 1689. Naturally it discouraged consumption. But nevertheless in 1703 the imports amounted to 105,000 lb; and the price had dropped to 16 shillings. From 1710 to 1810 the Company's sales aggregated 750,219,016 lb valued at £129,804,595. Of this quantity about 116 mils. were re-exported to other countries. In 1811 the quantity of tea consumed in the United Kingdom is recorded as being 22,454,532 lb; in 1820 it reached 25,712,935 lb; in 1830, 30,046,935 lb; in 1840, 31,716,000 lb; in 1850, 51,000,000 lb; in 1860, 76,800,000 lb, of which a very small proportion was probably Indian. At a very early period in the history of tea the East India Company obtained from the British Government the right to be the sole importers. This privilege they enjoyed for nearly one hundred and eighty years, it being abolished as late as 1833.

One of the most striking features in the history of the Indian tea industry is the gradual displacement of China tea by Indian in the United Kingdom. In 1866 China tea represented 96 per cent. of the total consumption, and Indian tea the remaining 4 per cent. From that time to the present the Indian proportion has been steadily increasing. In 1870 it rose to 11 per cent., and thence to 28 per cent. in 1880; to 52 per cent. in 1890; and to 59 per cent. in 1906. Ceylon teas first made their appearance on the London market in 1883. Of the total consumption they then represented one per cent. In ten years the percentage rose to 31, at about which figure it still stands. As regards actual weight, the imports of China tea did not decline until after 1879. In that year they reached their maximum of 126,340,000 lb. They have since so far contracted that in 1904 they did not much exceed 11 mil. lb. And even before 1879 China tea failed to keep abreast of the growing demand. From the overwhelming proportion of 96 per cent. in 1866, it fell to 83 per cent. in 1876. By 1886 it reached 59 per cent.; by 1896, 11 per cent; in 1901 it touched as low as 7 per cent. and by 1906 it had still further declined to about 3 per cent.

These are extraordinary figures, and they furnish conclusive testimony of the energy with which Indian and Ceylon tea proprietors have pushed their product. They are of interest also as showing how the British public gradually realised the superiority of Indian teas over Chinese. The capture of the British market has been indeed a great triumph for the British planter. But like most victories it has entailed a sacrifice. As the consumption of Indian and Ceylon tea has gone on increasing, the average price has continued to fall. In 1881—when the con-

sumption of Indian tea in the United Kingdom was just over 48¼ million lb—the average wholesale price was 1s. 5d. per lb. By 1891 this had dropped to 10½d; by 1901 it had reached 7½d.; but during the last year (1906-07), for which particulars are available, it had risen to 8·83d. per lb. Many causes have contributed to the fall which these figures exhibit. In a keen competition for a market, prices naturally decline, because the aggregate supply from the different competitors tends to exceed the demand. This has been the case as regards tea in the United Kingdom. At first sight the obvious remedy would seem to be to diminish supplies; in other words, to produce less. But to control production, except perhaps on the Trust or Combine principle, is practically impossible; and such a principle would not be likely to commend itself to Indian tea proprietors. Moreover, it must not be forgotten that it has been by producing so freely that India and Ceylon have ousted China. For it is very doubtful if even superiority of quality would have triumphed, except for the fall in price which the so-called "over-production" entailed. The diminution in the value of silver has also greatly influenced the production and price of tea. The fact that the bulk of the produce of Indian gardens was sold in a country with a gold currency, and was produced in a country with a depreciating silver currency, undoubtedly tended to stimulate production. As the price of silver declined, more rupees could be bought with the same quantity of gold; and cultivation consequently became cheaper. But the Indian Mints were closed in 1893; and the value of the rupee was subsequently fixed by legislation at 1s. 4d., the fifteenth part of a sovereign. Stability of exchange was secured, and the country generally has no doubt derived much advantage therefrom. But tea proprietors suffered as soon as the new gardens—which a depreciating rupee had tempted them to open—came into bearing. For while prices in the United Kingdom were tending to fall, the cost of production was at once considerably increased. Another indirectly adverse result of the currency legislation was that producers in China continued to work on a free silver basis, thus having an advantage over their Indian competitors.

But little need be said of the import duty, which has always been levied upon tea in the United Kingdom. At the beginning of the nineteenth century it stood at about 3s. per lb. It was gradually reduced, until it reached 4d. in 1890. At that figure it remained until the occurrence of the South African War. It was then enhanced to 6d., and again in 1903 to 8d. In April 1905 it was however put back to 6d., after a most vigorous agitation both in England and India by the tea industry; and in the following year it was reduced to 5d. at which it now stands. There is no necessity to deal with the effect of the duty on consumption. An import duty is really an addition to the price of an article; and an enhancement of it naturally tends to raise the price, and so to diminish consumption. At least it should do so theoretically, although in so complicated a trade as the tea trade it is difficult to follow the precise effects of a variation of two pence per lb. But the broad fact remains that, as the duty was gradually lowered during the nineteenth century, the consumption of tea in Great Britain progressively increased. It is a fair argument therefore to say, as tea producers do say, that if the duty were gradually reduced and ultimately abolished, the consumption per head of the population would still further develop.

It has been already pointed out that the United Kingdom has always been the principal market for Indian teas. The fact that production has to a certain extent outstripped demand has been also mentioned; and the difficulty of controlling production has been touched upon. But if supplies cannot be, or ought not to be, diminished, there is no reason why the demand in countries other than the United Kingdom should not be stimulated. And so to stimulate foreign markets has been for some ten or twelve years past one of the primary objects of both Indian and Ceylon producers. It is undeniable that Ceylon has taken the lead. About thirteen years ago the island planters induced their Government to impose a small tax on all teas exported. The proceeds of the tax were made over to a Committee of planters to be expended in advertising and subsidising Ceylon teas in foreign countries. The experiment succeeded; and with the funds thus placed in their hands the "Thirty Committee"—as the executive body is styled—have pushed Ceylon tea throughout the civilised world. In 1894 the quantity taken by foreign countries was only 14½ mil. lb. In 1904 it was nearly 86 mil. lb., and by 1906 it had increased to about 38½ mil. lb. On the other hand, the quantity sent to London in 1894 was 71½ mils.; in 1904 it was somewhat less than 79½ mils. and in 1906 it was about 92 mils. These figures show that Ceylon has largely succeeded in its efforts to control supplies to the United Kingdom by fostering the foreign demand.

India has not been quite so successful. Indian producers were unable to obtain the imposition of a tax until 1903. For ten years previously they had contributed to a voluntary levy. But the sum thus raised annually was very much below that derived from the Ceylon tax. Consequently, Indian efforts in foreign markets have been, until quite recently, less extensive and less persistent. Nevertheless they have not been without result. Progress has been made; and now that the cess—as the tax is termed—is in force, greater developments may be anticipated. In 1894 about 14¼ mil. lb of Indian tea were sent to foreign countries; in 1904 nearly 57 mils.; and in 1906 the total had increased to close upon 78 mils. On the other hand, Indian imports into the United Kingdom stood at 117 mils. in 1894; had risen to 155 mils. in 1904; and to 159¼ mils. in 1906.

The growth of the foreign demand has been accompanied by the development of Calcutta as a distributing centre. As transport has been quickened and cheapened, the tendency has been for foreign consumers to buy in Calcutta rather than in London. The Calcutta market has in consequence now reached respect-

able proportions, and every year witnesses a further growth. One quite remarkable feature of the last few years has been a great transference of the Russian trade from London to Calcutta. And not only has the trade been thus shifted, but it has greatly increased in volume. Direct exports to other countries are also developing.

It may be interesting to mention the amount of capital invested in Indian tea. To obtain exact particulars is not easy, as a considerable area is still controlled by private owners. But the official returns of Joint Stock Companies show that at the present time the invested capital aggregates Rs. 22 crores. Of the companies registered in India fifty-three declared dividends amounting to 6·3 per cent. on their aggregate capital in 1906. In the preceding year the dividends declared by the same fifty-three companies aggregate 5·6 per cent. Sixty-eight English companies with a total capital of 1,480 lakhs of rupees declared dividends amounting to 3·8 per cent. in the year 1904, and to 4 per cent. in 1905.

No account of the Indian tea industry would be complete without a reference to the question of the supply of labour. From the earliest days of tea planting in Assam there have been difficulties in obtaining a sufficient labour-force. In the Himalayan districts the gardens are, generally speaking, worked with local labour. But in Assam, and in the plains of Bengal, all tea is cultivated and manufactured by imported labour. The Assamese are not, as a rule, a labouring people; and the aboriginal inhabitants of the Dooars —the chief Bengal plains district— have retreated before civilisation. There is very little tendency on the part of the people of India to move voluntarily from one part of the country to another. Emigration to Assam has therefore been almost entirely of the assisted order. It has necessitated recruitment, and a system of transport. Legislation to prevent abuses in the recruiting districts, and on the journey, was first attempted by the Government of Bengal in 1863. The Act then passed was subsequently amended and revised on several occasions. Ultimately the inland emigration law was embodied in an Imperial Act, which was last revised in 1901. The system of recruitment and management of labour under the labour law is unique. It has grown up gradually, and is really a sort of compromise between the Government and the planters. The Government rightly felt it to be their duty to protect the ignorant coolie against the possible dangers of a long journey to an unknown country. To do this they imposed restrictions on recruitment, and compelled those recruiting the coolie to take care of him on his journey. These restrictions and regulations have now grown to enormous proportions. They are both numerous and complex, and provide for the smallest detail of recruitment and transport. Their introduction of necessity enhanced the cost of obtaining labour. On the other hand, the planter was given a greater measure of control over his labourer than the civil law permits. The coolie enters into an agreement to work for so long. But if he breaks his agreement, it is useless to bring a civil suit against him. For he is ordinarily a man without property, until he has been on the garden for some time. His contract under the labour law is therefore of a penal character; and if he absconds, he renders himself liable to imprisonment. On the other hand, heavy obligations are laid on the employer. Not only has he to bear the cost of Government inspection and supervision in the recruiting districts and *en route*, but he has also to provide rice for his labour force at a fixed price, irrespective of its market value. He has likewise to provide housing accommodation, medical attendance and other comforts; and his garden is open to the inspection of a Government officer. It is, as has been said, a unique system. But it cannot be truly termed successful; for labour in Assam is at once scarce and costly. The system obtains in Assam only, as in the Dooars of Bengal the labour is both imported and worked without Government intervention. The tendency at the present time is similarly to free the Surma Valley from the labour law. In that district it is not used to the same extent as in Upper Assam; but whether if it were entirely removed either employers or employed would ultimately benefit, is a problem still awaiting solution.

TEA CULTURE AND MANUFACTURE.

When tea culture was introduced into India between 1830 and 1840, the ignorance as to the methods to be adopted was all but absolutely complete. The tea districts of China were almost inaccessible and had been rarely visited by Europeans, and reliance had to be placed as to both methods of culture and manufacture almost entirely on the few Chinese who were imported into India for the purpose of carrying this out. If the intrinsic difficulty of tea culture be superadded to this absolute ignorance, there is little wonder that the first few years were a time of bad methods, of unhealthy tea, of small crops and generally of failure. The present system of cultivating the tea plant and of making tea are the outcome of many years of experiment and of invention, and the story of the last seventy years is full of the failures of those on whose experience the present sound structure has been built.

The tea plant, it may now be said, flourishes both on flat and hilly land up to a height of three to four thousand feet if conditions of climate are suitable. It is grown both in Ceylon and Darjeeling up to an elevation of nearly seven thousand feet, but the bushes at the higher elevations are very much less vigorous than at lower levels. It requires, for the best results, a rainfall of eighty to one hundred and twenty inches per annum, and this should be fairly well distributed throughout the year. A long period without rain is of grave disadvantage in tea culture, and prevents, almost entirely, the growth of the finer varieties. As to temperature, very little growth of tea leaf takes place when the minimum temperature is under 53° F., and the tea bush, at any time, is seriously damaged by frost. It may be taken that it is unwise to attempt to grow tea

wherever the temperature falls more than very occasionally below the freezing-point. Provided there be plenty of rain, the raising of the temperature has no evil effect but only increases the rapidity of growth. On the other hand, dry hot winds are fatal to luxuriant growth, and are largely responsible for the failure of tea culture in Chota Nagpur.

Two points are of special importance with regard to the texture of the soil. It must, first, be well drained, and secondly, it must be easily penetrable by tea roots. A hard soil and a water-logged soil are equally fatal to successful tea culture; in the former case the bushes cease to yield and become the prey of blights: in the latter, they die out. Wherever the soil is deep, moist, fairly porous well drained or drainable at all seasons, and with a sufficiency of plant food, tea is likely to do well so far as soil conditions are concerned. The soil must be well supplied with vegetable matter, though much excess in this constituent leads to the production of a large crop of weak watery tea without flavour. Poverty, in organic matter however, will lead to unhealthy tea, giving but a small crop. The quality of the tea seems largely to be dependent on the mineral plant food in the soil, chiefly the phosphoric acid and potash. All tea soils contain very little lime, and a large quantity of this constituent is deleterious to the plant.

There are several well-known varieties of the tea plant. The most important of these are the 'China,' the 'Assam indigenous,' and the 'Manipur.' The 'Assam indigenous' gives a distinctly better quality of tea than the 'Manipur,' and should be planted wherever the soil and climate are very favourable; where this is not the case, the 'Manipur' type is preferable, as it will flourish and yield well under conditions where the more delicate types would become the prey of disease. The seed is procurable about November. It does not keep well, and should be sown as soon as possible after being plucked. It is usually dibbled out into nurseries at from 4 to 6 inches apart in land very carefully prepared. Forty pounds of seed may be expected to give about ten thousand plants and will put out about four to four and a half acres under tea. Nurseries should be shaded for several months after the plants are above ground.

Planting out may be done either when the seedlings are six months old, or when they have been in the nursery for a year. The former plan is being increasingly adopted. They are put out with a ball of earth attached to the root into land carefully prepared for their reception in rows at a distance apart of 4½ by 4½ feet or 5 by 5 feet. The former (with square planting) gives a little more than 2,000 bushes to the acre; the latter only 1742.

After planting it has be n found necessary in India to keep the land carefully tilled, generally by hand-hoeing, both in order to prevent the growth of weeds and to keep the surface of the land loose. The following hoeing is usually considered to be required in North India:—(*a*) a deep hoeing at the commencement of the annual dry weather, which should be at least 8 inches deep; (*b*) from four to six light-hoeings per annum, each of which loosens the soil to a depth of about four inches.

Manuring is not usually needed for several years after a plantation is started. Nitrogenous manures are then principally required, and of these, cattle manure at the rate of twenty tons per acre is the best. Oilcake has been used recently in India with great advantage. Green manuring by means of a crop of *mati kalai* (*Phaseolus mungo*) grown among the tea in May and June has developed to an enormous extent in Assam in the last four years. In Ceylon *Crotolaria striata* has been similarly employed. Certain trees growing among the tea, notably *Albizzia stipulata* (the *sau* of Assam), have been found to have considerable benefit upon it.

In order to ensure continued yield, annual pruning of a tea bush is necessary. This pruning commences at an early age of the plant, and in best practice it is not the custom to cut down a seedling to six inches from the ground at a year old. Each plant then throws out new growth in the form of a bush, and is cut again two years afterwards at 14 to 18 inches from the ground. After this each year, only about 1½ to 2 inches of new growth is left on the bush (light pruning). Every few years it is necessary to cut more deeply into the bush (heavy pruning) and in extreme cases to prune it right down at the level of the ground (collar pruning).

The annual course of plucking (after light pruning) is about as follows:—After the tea has been pruned, new shoots begin to grow, and after 3 to 4 months, have attained a length of nine inches or more. At this stage the youngest two leaves with the unopened tip leaf are plucked off by hand ("tipping"). This "tipping" forces a secondary growth from the base of the remaining leaves on the original shoot, and after about three weeks, these secondary shoots can be similarly plucked, leaving two mature leaves on each below the point at which the plucking takes place. This brings about the growth of a third series of shoots, and a fourth, fifth, sixth and seventh series are obtained in the same way. These are known as '*flushes*.' Eight distinct series of flushes is usually the largest number given by bushes in one season. In the early part of the season the pluckings are almost coincident with the growth of the flushes. After this they are much more frequent, and the bushes are usually plucked from twenty to thirty times during the year at intervals of from seven to nine days during the greater part of the season.

Almost the whole of the leaf plucked in India is now manufactured into black tea. The method used is briefly as follows:—

The plucked leaf, brought in from the estate, is spread, as thinly as possible, in a cool and shady house on trays of hessian or bamboo, to 'wither.' Here it remains until it is flaccid. This operation of withering takes a time varying from 12 to 36 hours. At a temperature of 80° F., the ideal time is about 20 hours. When in a flaccid condition the 'withered' leaf is ready to roll. The old system of rolling was to place the withered leaf on a table where it was rolled to and fro under the pressure on

the hands till the juice was expressed and the leaf well twisted. *Now* this process is performed usually by machinery which imitates the action of the hands in squeezing and twisting the leaf, and so expressing the juice. The harder it is rolled the more juice is expressed and the darker in colour is the liquor obtained by infusing the finished tea; the lighter the rolling, the more juice remains in the cells and a pungent light-liquoring tea is produced, in which the golden colour of the immature tip leaf is not darkened, thus giving a pretty looking tea full of "golden tip." The rolled leaf is then fermented, for which purpose it is placed under conditions of the greatest cleanliness possible, in a cool and damp house on shelves, or on a cement floor, in heaps two to four inches thick. The colour and smell of the leaf gradually change, the mass becomes coppery brown in colour, loses its leafy smell, and gets the odour of black tea. When the change has gone far enough (a point which only an expert can judge), the leaf is taken away and dried off as quickly as possible at a temperature of 200° to 220° F. The time which the fermentation takes varies from 2 to 6 hours. The drying is done by a current of hot air, in machines made especially for the purpose.

After firing, the tea is sorted for the market by sieves. The 'dust' is taken out by the finest sieve, the 'broken orange pekoe' or youngest and finest leaf by the next, and so on, the grades usually made being, in order of fineness, 'broken-orange pekoe,' 'broken pekoe,' 'pekoe,' 'pekoe souchong,' 'souchong.'

Sorting is done by hand on small estates, but in large plantations machinery is used.

Since 1901 there has been a considerable revival of green tea making, but under conditions quite different to those under which it was made in the early days of tea in India. The object being to roll and dry the tea leaf without fermentation, the first process consists in destroying the ferment by heating the leaf, fresh from the garden, with steam under pressure for one or two minutes in a revolving cylinder. The material is partially dried, then rolled and then finally fired off at once.

Tea is packed in wooden boxes lined with thin sheet lead (tea-lead) which should be soldered so as to be quite air-tight. Before putting into these boxes, however, the sorted tea must be again fired at about 180° F. until quite dry, and packed while still slightly warm.

The yield of leaf on Indian tea estates varies from about 200 pounds per acre up to 1,100 pounds per acre. The former amount is given by high level Darjeeling gardens plucking very fine (*i.e.*, very young leaf only) and making high quality tea. The latter is obtained on the most luxuriant of the peat bheel estates in Sylhet. The average for the more important districts in North-East India for the last five years was as follows:—

	lb.
Brahmaputra Valley	435
Surma Valley	459
Dooars	457
Darjeeling	297

The

Indian Cotton Industry.

Historical.

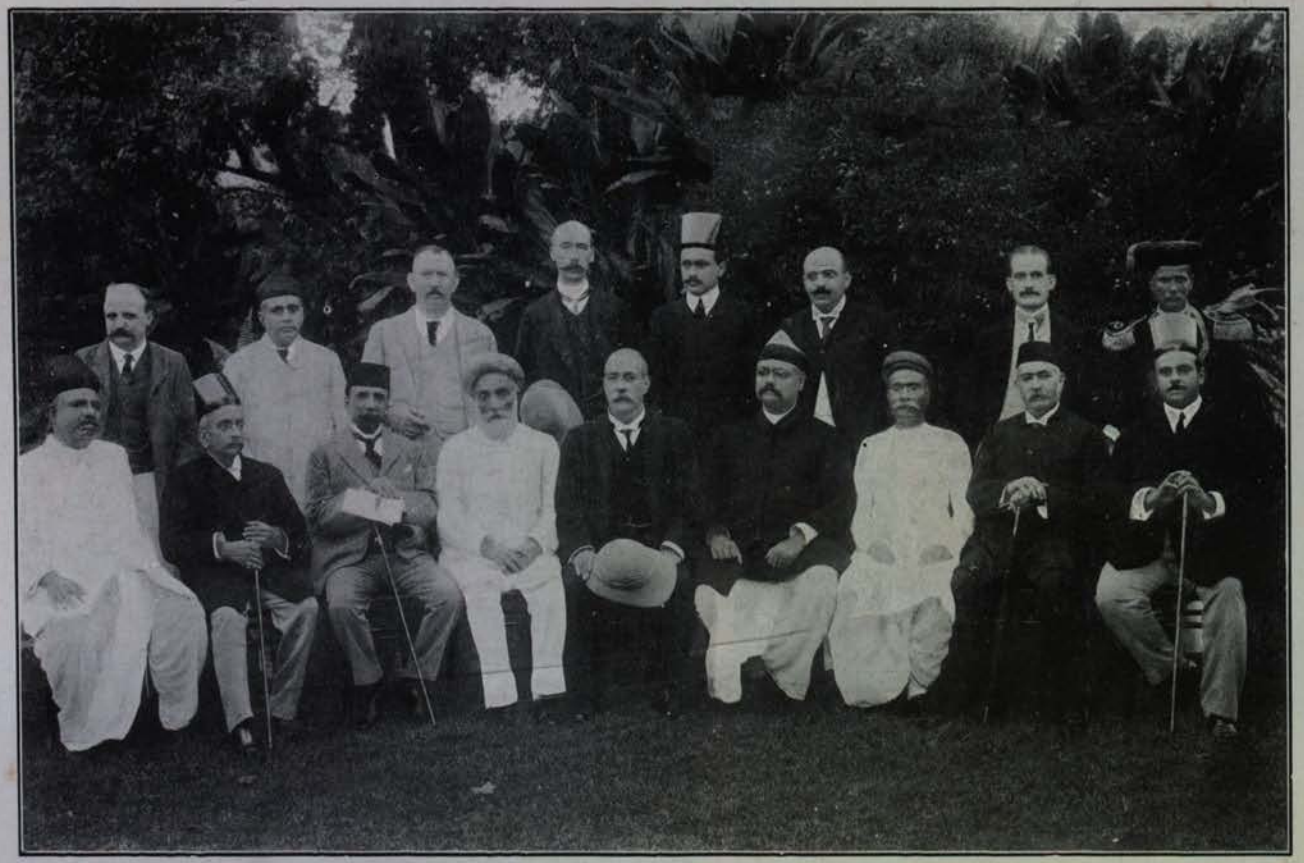
Though the date of the inception of the art of weaving cotton into cloth in India has not been accurately ascertained, it is well known to have existed from times the most ancient. According to the late Sir William Hunter, it was known as far back as the days of the Mahabharata, which itself counts several centuries. Periplus, who is recognized as the earliest authority on the trade of India, enumerates a great variety of cotton fabrics among her exports. The generic name for these among the ancient Greeks was *Sindon*, which is said etymologically to be the same as *Sindu*, or the country watered by the Indus. But it may not be uninteresting here to quote some further observations of the distinguished author of the *Imperial Gazetteer of India*. "Marco Polo, the first Christian traveller," he says, "dwells upon the cotton and buckram of Cambay. When European adventurers found out the way to India, cotton and silk always formed part of the rich cargoes they brought home. The English, in particular, appear to have been careful to fix their earliest settlements amid a weaving population—at Surat, Calicut (whence the word "calico"), at Masulipatam, at Hughli. In delicacy of texture, in purity and fastness of colour, in grace of design, Indian cottons may still hold their own against the world." Thus India may be correctly considered as the original home of the cotton plant and cotton industry, from immemorial times. Her fabrics were highly prized by men from the West, who directly traded with her from the days of the early Roman Empire. These manufactures continued in great estimation, at high cost, till Lancashire started her first spindle and loom by motive power, and gradually shut out the import of the indigenous products altogether. Many circumstances have since conspired to bring about a serious decline in the hand-loom industry. As Sir William Hunter correctly remarks: "In the last century, England excluded Indian cotton fabrics, not by fiscal duties but by absolute prohibition. A change of fashion in the West Indies, on the abolition of slavery, took away the best customer left. Then came the cheapness of production in Lancashire mills, due to improvements in machinery. Lastly, the high price of raw cotton during the American War (1861-5), however beneficial to the cultivators, fairly broke down the local weaving trade in the cotton-growing tracts." But above all other circumstances there was one of such paramount importance to England in her economic relations with India that it might be most properly said to have well nigh ruined that most ancient and profitable industry. "The necessity," says Sir William Hunter, "under which England lies to export something to India to pay for the multifarious imports, has permanently given an artificial character of inflation to this branch of business." The inflation, it should be observed, has gone on steadily upwards. In the proportion that exports from India to the United Kingdom have increased, the ratio of imports of cotton cloths from that country has also shown increase. Those imports have risen in value from 16·45 crore rupees in 1875-6 to 36·95 crore rupees in 1905-6, notwithstanding the fact that steam cotton mills have gone on multiplying in India during the whole of the intervening period. It remains, however, to be seen, whether, with the recent growth of the spirit of *Swadeshi*, accompanied by the industrial revival which is to be noticed all around, this heavy importation of piece-goods, the value of which amounts to 35 per cent. of the total private merchandise imported in 1905-6, will be maintained.

Early Cotton-spinning by Machinery in India.

Meanwhile, the rise and growth of the indigenous cotton industry in this country by means of steam power, may be narrated. On all hands it is admitted that the very first cotton mill of the kind which was successfully started was in Bombay in 1853, though it is a fact that the Goosery Mill made a prior start at Calcutta several years earlier, but without any of the success which attended the one which owed its origin to the enterprise of a Parsi gentleman named Cowasji Nanabhoy Davar. It was a small concern of about 5 to 6,000 spindles only. A mill equipped with both spindles and looms was, at the time, still a possibility of the future. When we take into consideration the condition of the sea-borne trade in all India which was wholly carried on by means of sailing vessels, *viâ* the Cape of Good Hope; the average duration of four months for a voyage from England to Bombay, or Bombay to England; and the fact that the means of landing and transport were of the scantiest, while unskilled labour had to be organized and coaxed into engaging itself in this industry (considered extremely dangerous by reason of the novel machinery and appliances to be worked), some faint idea of the many difficulties which had to be surmounted by the projector of the enterprise may be realized. True it is that Bombay, as the port of export of raw cotton, had a few presses of a rude type, which were worked by steam power. These presses served to impart a knowledge as to the saving of manual labour that could be effected by machinery. But beyond having some little experience of the pressing of cotton bales for export, the citizens of Bombay engaged in the foreign trade had no concrete ideas as to the spinning of the raw material by means of machinery driven by steam power. So that the enterprise on which Mr. Davar embarked was at once novel and risky, and was viewed by those unacquainted with the earlier history of Lancashire steam cotton factories, with exceeding curiosity, if not sus-

GROUP OF MEMBERS OF THE BOMBAY MILLOWNERS' ASSOCIATION.

Mr. Bradbury. Mr. Herbert Greaves. Mr. Naoroji B. Saklatwala.
Mr. Dwarkadas Dharamsi. Mr. Leslie Rogers, *Secy.* Mr. Nusservanji N. Wadia.
Mr. C. J. Michael, *Asst. Secy.*



Mr. Manmohundas Ramji. Sir Jehangir C. Jehangir. Sir Sassoon J. David. Mr. Narondas Purshotumdas.
Mr. Bomanji Dinshaw Petit. Mr. Ahmedbhoy Habibhoy. Sir Vithuldas D. Thakersi. Mr. Jamsetji A. Wadia.
Sir Dinshaw M. Petit, *Bart.*

picion. But he was a man of great courage in mercantile affairs and withal of fertile resource. He, with some other well-informed Parsis of the day, specially one Mr. Pestonji Ruttonji Colah, a scion of a wealthy Parsi family, having large trade connections with China, were, however, the very first who seemed to have paid attention to the potentialities of spinning and weaving cotton by machinery in India. Mr. Colah had acquired a liberal education at the Elphinstone College, and from his academic days onward was engrossed in stimulating the wealth and enterprise of his countrymen by drawing attention to the exceeding importance of fostering and developing the reproductive industries of India. There is his thoughtful and practical book on the subject, which might be read even to-day with profit. At any rate, it contains many practical reflections on the industrial evolution of the country, which are almost prophetic, judged by the events which have since occurred.

These enterprising young Parsis of the early Fifties seemed to have possessed the inquisitive and adventurous faculty to a remarkable degree. They inquired why it was not practicable for India to manipulate her own cotton, and how it was that the raw material was exported in large quantities on the one hand, and, on the other, imported back into the country in the shape of manufactured yarn and cloth ? Where would Lancashire be without cotton ? But the indigenous staple in this country was at their very door. Why then might it not be manufactured into finished yarn, or piece-goods, by the same means which were employed by Lancashire ? It was this healthy and patriotic spirit of inquiry that led to the starting of the first steam cotton mill in India.

Spinning machinery was the first requisite, and skilled labour the next. Assisted and guided by some sympathetic European friends in the city, Mr. Davar boldly embarked on his great enterprise, which was, within twenty years, to make Western India familiar with cotton spinning and weaving, and bring about a healthy but most gratifying revolution in industrial development during the subsequent thirty years. The country owes a debt of gratitude to the pioneer of this great industry in the land and those who were actively associated with him in bringing it to a successful issue. That first mill still stands on the ground on which it was originally built, albeit many of the blocks which were subsequently added from time to time by Mr. Davar's successors have been burnt down and reconstructed. It is situated in Tardeo, which was the first mill district in point of importance, and is now known as Shivlal Motilal's, though the original name was "The Bombay Spinning and Weaving Company."

Rise and Growth.

Fifty years are, of course, very little in the life of a people. Having regard to the condition of education in the country, the lack of facilities of communication for purposes of trade between one town and another, between district and district, and between province and province, the absence of railways and steam vessels, the paucity of monetary institutions such as banks, the non-existence of paper-currency; in short, of the almost total lack of all those diverse resources of a highly organized industrial country, at the time of the establishment of Mr. Davar's mill, just fifty years ago, it is a matter of satisfaction to notice the progress which in the meantime has been made in the cotton industry. Of course, it cannot be said that even after the progress of half a century India has become in any way a serious rival or competitor to Lancashire. She is yet far away and behind that stronghold of Great Britain's textile industry.

The following statistical return from the *Economist* (12th September 1906) gives the reader a complete grasp of the world's spindle power :—

1906.
In Crores of Spindles.

Great Britain		5·00
The Continent		3·55
Total, Europe		8·55
United States, North		1·56
,, South		0·92
Total, United States		2·48
East Indies		0·52
Japan		0·15
China		0·06
Total, Asia		0·73
Canada		0·08
Mexico		0·07
		0·15
Grand Total, World		11·91

Since September 1906, the United Kingdom has increased its spindle strength by another 30 lakhs, and the Continent by 5 lakhs. Practically, therefore, the number of spindles which will soon be at work in the former country will amount to 5·30 crores. Against which India can boast of only 52 lakhs. In reality, India is behind the United Kingdom in spindle power alone to the extent of 4·78 crores. The total number of looms, including the addition of about 80,000 last year, number as many as 7,00,000 against India's 65,000, according to the latest computation. It will be thus noticed how immeasurably behind is the country in the strength of its power looms and spindles. There is, however, nothing to be despondent about. India started on her industrial evolution a century behind Great Britain, and it will tax all her energies and resources, despite the fire of *Swadeshism* now kindled, to be able at some measurable distance of time to run a race with the latter country.

Early Vicissitudes.

Coming to the history of the cotton industry, it might be stated that between 1853 and 1874 there were no more than fifteen mills, all told, in the Island of Bombay. The principal of these were, the Davar, the Oriental, the Maneckjee Petit, the Alliance, the Great Eastern, the Morarjee, the Albert, the Royal and the Coorla. Of these, the Oriental, the Maneckjee Petit, the Great Eastern, the Morarjee, the Royal and the Coorla were both spinning and weaving concerns. They were almost all in their infant stage and their products

were mostly confined to coarse yarns, from 6's to 20's, and coarse cloths for domestic consumption, which required 18's weft and 14's warp. And just as half a dozen of these institutions were feeling their way into the Indian and Chinese markets, there was the great enhancement in the price of the raw staple, owing to the American War. The United States could not send any quantity of cotton to feed the Lancashire spindles and looms. As a result, these had mostly to remain idle. There was a famine in that county by reason of the operatives being out of work. The situation was indeed extremely grave. A relief fund had to be started, to which Bombay merchants contributed considerably, the late Mr. Rustomji Jamsetji, the son of the first Parsi baronet and philanthropist, Sir Jamsetji Jeejeebhoy, leading the contribution with a princely sum. Bombay merchants in cotton, as well as the cotton growers and middlemen in the districts, were reaping a golden harvest by the enormous and unprecedented rise in prices. During the height of the war, and when famine in Lancashire was at its most acute stage, cotton was selling in Liverpool at the high rate of Rs. 650 to 700 per candy of 784 lbs. Under such an inflated condition of the cotton market, it was next to impossible for the handful of Bombay spinning factories to work at a profit. They had all to stop till the prices reached their normal value, namely, Rs. 150 per candy, leaving a fair margin for yarns and cloths. At the same time, the first early consignments of Indian yarn to China met with such ill success that they had to be returned to Bombay! Thus the few mills in existence had had to pass through no ordinary ordeal at the very commencement of their operations, say between 1862 and 1867. It was little imagined that the mainstay of Indian yarn would, a few years later, be found in that very country whence the earliest consignments had had to be reshipped to the port from which they were originally exported. But the Capture of Richmond brought an end to hostilities in the United States, and at the same time led to heavy bankruptcies of dealers and speculators in Bombay. The plethora of money, by way of profits, literally "beyond the dreams of avarice," which were poured into that city, led to the institution of all kinds of 'wild cat' financial and trading speculations, the shares in which, no sooner were they allotted, than they rose to a handsome premium. There was no limit to the number of mushroom concerns which were then being daily started. Speculation in all kinds of shares, especially reclamation shares, which rose to fabulous prices without rhyme or reason, became so rife that it recalled the history of the South Sea Bubble of a hundred years or so before. With the restoration of peace in America, the bull market was swept away. Huge quantities of American cotton were thrown on the English market, and the fall in prices in Bombay was unprecedented. Wagering contracts had to be fulfilled, but such was the insolvent condition of Bombay traders and merchants that there was no hope of a revival till there was a general liquidation. Indeed, the heavy bankruptcies which ensued so alarmed the Government of the day that a special Act (28 of 1865) had to be passed to allow bankrupt estates to be wound up by trustees, but under the inspection of the High Court, it being deemed impossible that that tribunal could at all cope, in its ordinary insolvency branch, with the numberless estates thrown into insolvency. At last, confidence was re-established and credit revived, so that by 1870-1 Bombay's commerce again resumed normality and a new era seemed to dawn by way of promotion of a new development in cotton manufactures. The evil of excessive speculation and the disastrous failures in the cotton trade led Bombay citizens to cast about for the promotion of new industries which might be reasonably carried on with profit, independent of disturbing external factors. And no industry commended itself more to their practical sagacity than that of cotton. They had had some experience of the margin of profit which had been realized during the few years before the outbreak of the American Civil War. It was, therefore, thought that while cotton-spinning would branch off into new industries, with many potentialities, it was in every way sound, and a profitable investment, with few risks, if carefully and sagaciously managed.

First Satisfactory Stimulus, and Lancashire's Alarm.

That was the principal reason which led to the promotion of fresh spinning and weaving companies. It was seen how, after 1867, handsome dividends were realized by investors in the new industry. Another stimulus came by reason of the introduction of the system of remuneration to mill agents. It was the Oriental Spinning Company, then most successfully managed by the late Mr. Merwanjee Framjee Panday, which first adopted the rate of one-quarter-anna per pound by way of commission on all the production. The sister institutions soon followed suit, as it was discovered that even after bearing such a heavy burden in the shape of commission, the mills were able to pay handsome dividends. The third incentive came by way of China. Exports of yarn to that country, which had been resumed, began to prove most remunerative. So much so that by 1874 it began to dawn upon Lancashire that with cheap cotton at their very door and cheap labour, the millowners of Bombay were able to compete with their coarser yarns in the common markets of China. The Palatine county was alarmed. There was a flutter in the dove-cot of the manufacturers. Immediately an agitation was set on foot for the abolition of the import duty of 7½ per cent. on all foreign cotton fabrics, almost all from the United Kingdom. Lancashire urged the Ministry of the day, with the late Marquis of Salisbury as the Secretary of State for India, to bring pressure on the Government of India for a repeal of the import duty, on the ground that it was protective. In vain did the Indian Government, then presided over by the late Lord Northbrook, decline to take off the duty, robustly declaring that it was levied for purely revenue purposes, and that the products of Indian cotton mills in no way competed with those of Lancashire. The Viceroy observed that no statesman, with the true interests of India at heart, could consent to the repeal of the duty and the consequent disruption in the finances of the Empire. But Lancashire was not satisfied. It was

bent upon nipping in the bud, as it imagined, the rise and progress of Indian cotton spinning and weaving, threatening as it did, in future, to shut up its trade in coarser yarns in the China market. The Disraeli Ministry continued to press the Indian Government. Lord Northbrook, a strong free trader and a righteous Viceroy, deemed it wise therefore to lay down his Viceroyalty rather than accede to the importunate demands of Lancashire. Lord Lytton succeeded Lord Northbrook. He came prepared to execute the mandate of the Ministry which had appointed him Viceroy. But the Second Afghan War and a severe famine intervened, so that it was not until the early part of 1878 that the Government of India first announced the repeal of all import duty on the coarser class of cotton fabrics, and a reduction in that on the finer class of cotton goods. It was thought that this fiscal policy adopted by the Indian Government would go a great way to check the growth of more cotton factories. But Manchester counted without its host. The agitation, which it had set on foot and which had proved so successful in its eyes, was a direct incentive of a most powerful character to the establishment of more factories. Ten years of cotton spinning and weaving in Bombay had established beyond the shadow of a doubt that it was the most profitable enterprise in which the citizens could invest their capital.

In 1874 Bombay had fifteen cotton factories, but in the following year there were twenty-seven, and this number was increased by nine in the ensuing five years. At the close of 1882, which year witnessed the total abolition of all import duties save those on liquor and arms, there were as many as 36 mills in the Island of Bombay, and 29 in different parts of all India; 65 in all. For a clearer comprehension of this historical fact in the industrial annals of the country the following table distributing the mills between Bombay City, Bombay Presidency and the rest of India might be profitably studied :—

Number of Mills in—	1876.	1882.
Bombay Island	29	36
Bombay Presidency	10	13
All other parts of India	8	16
Total all India ..	47	65

The following comparative statement shows the number of spindles and of looms in each period :—

All India 1876. Total No. of spindles ..		11,00,112
„ 1882. „ „ „ ..		16,20,814
Increase ..		5,20,702
Percentage of Increase ..		47·33
All India 1876. Total number of looms ..		9,139
„ 1882. „ „ „ ..		14,172
Increase ..		5,033
Percentage of Increase ..		55·07

It is evident from the statistics quoted above that between 1876 and 1882, there was greater activity in the loom line, which was not unnatural. Since the time (1878) when Sir John Strachey abolished the duty of 7½ per cent. on the coarser class of imported piece-goods, the millowners clearly foresaw that sooner or later the duty on the rest of the piece-goods, which was reduced to 3½ per cent., would also have to be repealed. Under the circumstances they took time by the forelock and commenced importing a larger number of looms, feeling sure that this branch of the industry would grow and expand more and more and become most productive. They also found that such cloths as were woven by Indian mills were growing not only more popular in the country but in the markets of Arabia and Africa, and that the exports showed a satisfactory increase.

A Great Leap Forward.

The year 1882 was in more ways than one an "epoch-making" one. Sir Eveleyn Baring, then Finance Minister, was able to make India a free trade country. It was inevitable that it should be so, and as soon as the finances of the country recovered from the depression through which they had passed, the opportunity was seized to declare all import duties abolished, and taxation for the masses lightened by a reduction in the salt duty. This prosperous condition of the finances had its reflex influence on the trade. The abolition of the import duties gave an immense stimulus to the construction of more cotton factories in Bombay and elsewhere. The promoters were able now to import all machinery, accessories, and stores free of duty. And, as Indian piece-goods were forging ahead in the country itself by reason of their cheapness and better enduring qualities, weaving also received a further impetus. If between 1876 and 1882, the number of mills in the Bombay Island increased from 29 to 36, the additional factories started between 1883 and 1888 was 61. In the Bombay Presidency, too, there was an increase of 9, and of 15 in the rest of India. By 1890 there were in the whole country 137 mills. From 47 in 1876 to 137 in 1890 was indeed a big step. The growth was phenomenal and a record one. The number of spindles in use in 1890 was 32,74,196, and of looms, 23,412, of which as many as 18,95,660 of the former (or more than half), and 13,785 of the latter were in Bombay City.

It may be asked, what became of the products of so many mills in all India—both yarn and cloth. As to the former, the exports to the Straits Settlements, to Hongkong, Shanghai and other Treaty Ports in China, as well as to Japan, tell their own tale, as will be more clearly discerned from the following figures :—

Exports of Twist, 1876, valued at ..	Rs. 32,43,760
„ „ 1890 „	„ 6,62,71,650

Foreign ports, especially those of China, absorbed nearly the whole of the Indian yarn. Thus in thirteen years India had been not only able to push her yarn in the China market, but to establish the trade on a most healthy and remunerative footing, quite apart from a larger domestic consumption.

Slower Growth since 1897 on account of Plague and Famine.

Between 1890 and 1900 India had to pass through exceedingly severe ordeals. Harvests in many prov-

nces were deficient, commencing with the season 1893-94. But in 1896-7 there prevailed a severe famine, on the heels of which followed the greater scourge of plague. And as if these dread visitations were not sufficient to retard the development of the country, agriculturally and industrially, yet another famine, more severe than the first, overwhelmed the people in 1900-1. But the effects of famine disappeared from the country two years later, though pestilence still prevails, without any immediate prospect of disappearance. Upwards of five millions of people, according to the latest official returns, have fallen victims to the scourge in ten years. If under such distressful and mournful conditions, trade and industries were somewhat retarded, it is not unnatural that, so far as the expansion of the cotton industry was concerned, there was a diminution. Between 1876 and 1890, as stated above, as many as 90 cotton mills had sprung up in different parts of the country, principally in Bombay and Ahmedabad. But the number which grew between 1891 and 1905 was not so large. There is a record of an increase of only 60. Of these the share of Bombay came to 11, of the Bombay Presidency to 35, and of the rest of India to 14. The total spinning and weaving strength in all India at the close of 1905 was 51,63,486 spindles and 50,139 looms, distributed as follows:—

	Spindles.	Looms.
Bombay City	25,60,916	28,073
Ahmedabad	5,77,166	7,197
Surat	45,910	420
Broach	70,844	859
Baroda	16,188	259
Nariad	14,548	..
Wadwan	10,520	206
Viramgaum	32,395	410
Bhavnagar	14,288	241
Morvi	1,664	36
Poona	15,874	449
Sholapoor	1,34,520	526
Belgaum	69,324	..
Dharwar	51,224	..
Julgaum	20,948	413
Rajputana	22,600	252
Berar	16,336	248
Central Provinces ..	1,78,236	2,385
Hyderabad (Nizam) ..	55,358	612
Central India	25,668	224
Bengal Presidency ..	4,37,283	218
Punjab	86,658	403
United Provinces	2,96,906	3,389
Madras	2,86,844	1,747
Travancore	25,560	..
Mysore	29,784	203
Pondicherry	65,924	1,369

The total strength was increased in the year 1906 by 116,109 more spindles and 2,529 looms. The total number of hands employed was 208,616, while the quantity of cotton approximately consumed was 70,82,306 cwts.

Statistics of Production.

According to the official statistics, the production of yarn and cloth was as under during the three years ended 31st March 1906:

In Crores of lbs.

	1903-04.		1904-05.		1905-06.	
	Yarn.	Cloth.	Yarn.	Cloth.	Yarn.	Cloth.
Bombay ..	41·49	11·27	42·23	13·10	49·16	13·19
Madras ..	2·87	0·53	3·01	0·66	3·53	0·81
Bengal ..	4·65	0·07	3·83	0·07	5·13	0·07
United Provinces ..	2·99	0·55	2·74	0·60	3·44	0·76
Punjab ..	1·16	0·01	1·16	0·01	1·47	0·03
Central Provinces and Berar ..	2·45	0·76	2·62	0·83	2·83	0·79
Native States ..	2·26	0·61	2·24	0·60	2·53	0·73
Total ..	57·87	13·80	57·83	15·87	68·09	16·38

It will be seen from the above figures that during the first two years of the triennial period the total production of yarn was nearly the same, say, 57·85 crore lbs. In the last year, however, it amounted to 68·09 crore lbs. which was an upward leap of as much as 10·24 crore lbs., or an increase of 18 per cent. This was accounted for by the great boom which overtook China in 1905. The demand for yarn, specially lower counts, 10's, 12's and 16's, was so great that there was an abnormal activity in the industry, notably in Bombay where many a mill is equipped with electric installation and was therefore in a position to work for longer hours. It has been stated that some of those mills worked on till 9 P.M. Of course, owing to the great demand, there was a rise in prices which left an exceptionally large margin of profit, almost a record one, between the raw staple and the finished product.

Here it will be useful to analyse the total production of yarn which annually averages about 56 crore lbs. It consists of a variety of counts ranging from 1's to 40's. Indian mills, being practically equipped for low and medium counts, fully 80 per cent. of their outturn is in yarn from 1's to 20's, the rest being made up of counts from 21's to 40's. The official return divides the counts into four classes, and we might follow that classification which is in every way rational, *viz.*, (1) from Nos. 1 to 10; (2) from Nos. 11 to 20; (3) from Nos. 21 to 30; (4) from Nos. 31 to 40. Taking the year 1904-5, which was the last *normal* year of production, the total production, 55·59 crore lbs., was made up of the following counts:—

In Crores of lbs.

1. From 1's to 10's	15·74		
2. " 11's to 20's	28·82		
		44·56	
3. " 21's to 30's	9·21		
4. " 31's to 40's	1·69		
Above 40's	0·13		
		11·03	
Total		55·59	

Taking group No. 1, it appears that fully 13·07 crore lbs. out of 15·74 crore lbs. was made up of 10's, while there was an outturn of 1·16 crore lbs. of 6's. It will be thus seen that the coarsest kinds of yarns produced formed 28·31 per cent., or more than one-fourth of the total output. The next (No. 2) group

showed an outturn of 28·82 crore lbs., the bulk of which consisted of the following numbers :—

	Crore lbs.
No. 20's	12·97
„ 12's	4·51
„ 16's	2·99
„ 11's	2·18
„ 18's	1·22
„ 14's	1·33

In this group 20's show the largest production almost equal to No. 10's while No. 12's come next. The ratio of the production under this class to the total production works out at 51·84 per cent., so that more than half of the total production is made up of yarns between 11's and 20's. The third group shows a production of 9·21 crore lbs., of which the most important counts are :—

	Crore lbs.
No. 22's	2·55
„ 24's	1·94
„ 21's	1·47
„ 30's	1·27

Both No. 21's and 22's are chiefly for Eastern Bengal, while 24's are mostly for the Straits Settlements. This group shows a percentage of 16·57 to the total production. Lastly, there are the counts from 30's up to 40's classified as under :—

	Lakh lbs.
No. 40's	41·62
„ 32's	39·12
„ 36's	28·17
„ 34's	20·44

This group shows a ratio of only 3 per cent. to the total production. Summarising, we may say that —

(a.)	Counts from 11's to 20's were produced ..	51·84	per cent.
(b.)	„ „ 1's to 10's „ ..	28·31	„
(c.)	„ „ 21's to 30's „ ..	16·57	„
(d.)	„ „ 31's to 40's „ ..	3·00	„

Production was distributed among the various provinces, as follows :—

	Crore lbs.
Bombay Presidency	42·22
Bengal Presidency	3·84
Madras Presidency	3·01
United Provinces	2·73
Punjab	1·16
Central Provinces and Berar	2·63
Total for British India ..	55·59

As far as 10's and 20's are concerned, the share of the City of Bombay is the largest. In 1904-05, the production of 10's there equalled 10·64 crore lbs., and of 20's 8·61 crore lbs. Ahmedabad, however, surpassed Bombay in the production of higher counts, above 30's. The following comparison may be made :—

	31's to 40's. Crore lbs.
Bombay	0·31
Ahmedabad	1·07

That as much as 1·69 crore lbs. of finer counts, say from 31's to 40's, were made in 1904-5, is a matter of satisfaction. But seeing that the imports of the same description from the United Kingdom and elsewhere during the same year, 1904-5, came to 1·69 crore lbs., it is doubtful whether India has made any considerable progress in these sorts. The next few years, however, should be able to show whether the country is really making headway in its manufacture of the finer counts, or is stationary. It is not improbable that with the larger number of looms at work at present, added to those which will be at work by the end of the current year, higher counts may be spun for weft, as some of the mills are now laid out for coloured goods, which compete with the best of the imported kind from Lancashire.

Before concluding this part of the subject it may be as well to adduce the latest statistics of the outturn of yarn. In the observations made hitherto, the year 1904-5 was specially selected to point out the normality of the production, as the year following was one of exceeding inflation. But the statistics for the twelve months of 1906-7 are now available. These show that the total production was 63·05 crore lbs. classified as below :—

	1906-7.
No. 1's to 10's crore lbs. ..	14·77
„ 11's to 20's „ ..	35·37
„ 21's to 30's „ ..	11·07
„ 31's to 40's „ ..	1·69
Above 40's „ ..	1·49

Statistics of Cloth Production.

Coming now to the cloth production, it may be premised that it has made rapid and substantial progress during the last few years. Even before the propaganda of *Swadeshism* was actively taken up in Bengal the Bombay Presidency at least was unobtrusively attempting to increase the strength of its loom power. Millowners had surveyed the field for the consumption of their cloth, and had come to the conclusion that there was ample room for expansion, in view of the larger demand for domestic consumption. The demand for exports to foreign parts had received a check since 1896-7, owing to both plague and famine, and the branch of the trade has not yet recovered its former healthy condition. In 1896-7 the yardage exported equalled 7·46 crores, but it went on steadily declining till 1900-1. In the following year 7·26 crore yards were recorded which, however, rose to 8·74 crores in 1904-5. In 1905-6, it was higher still, namely, 9·20 crore yards, while for the twelve months of 1906-7 it was 7·67 crores. But though the foreign exports are somewhat better of late, after well nigh ten years of depression, there is no question that the total production of cloth by power looms shows a satisfactory increase annually. The following are the statistics for the triennial period ending with 1905-6 :—

1903-4 ..	Crore yards	43·79	13·19 Crore lbs.
1904-5 ..	„	52·61	15·27 „
1905-6 ..	„	53·64	15·66 „
1906-7 ..	„	68·18	15·90 „

There was a satisfactory increase of 18·7 per cent. in yardage in 1905-6 over the production recorded in 1903-4; but the upward movement in the 12 months of 1906-7 is phenomenal. The increase is 2·71 crore

yards, equivalent to 20·5 per cent. The principal description of piece-goods manufactured for the three years ending with 1905-6, and those for the twelve months of 1906-7, may be classified as under :—

CRORES OF YARDS.

	1903-4.	1904-5.	1905-6.	1906-7.
Chadars . .	3·89	3·95	4·17	4·56
Dhotees . .	11·31	12·53	13·76	17·06
Drills and Jeans	0·55	0·93	1·45	1·90
Printers . .	1·56	2·85	2·89	2·58
Shirtings . .	15·86	19·76	18·47	18·60
T. Cloth . .	8·18	9·27	11·28	10·80
Sundries . .	2·35	3·21	1·50	1·34
Figured and coloured goods (in crores of lbs.)	2·32	2·65	2·84	2·70

It will be noticed that by far the largest production consists of shirtings, which are no doubt steadily competing with those from the United Kingdom. Taking the average annual production of cloth for the triennial period ending with 1905-6 at 50 crore yards, the annual average of shirtings comes to 18 crore yards, which is equivalent to fully 36 per cent. of the total production of cloth in British India. Next come dhotees. The production in this description has been greatly stimulated, especially during last year. The great demand which set in for dhotees at the close of 1905, and continued all through 1906 on account of the *Swadeshi* movement, accounts for this large growth. In 1905-6 the weaving companies had not an adequate number of looms to meet the growing demand, but an effort was then made to increase the loom strength, and to this effort is due the excellent results noted in 1906-7. It may be presumed that with the number of looms which are still in course of erection, or likely to be erected by the close of the current year, the production of dhotees will show an even greater increase. The annual average production for the triennial period comes to 12·56 crore yards, which gives a ratio of 25 per cent. on the total production. The third important item, quantitatively, is T. cloth, which shows an annual production, on an average, of 9·24 crore yards. This gives a ratio of 18·8 on the total outturn.

The distribution of the total outturn of cloth by Provinces may be seen from the following table :—

CRORES OF LBS.

	1903-4.	1904-5.	1905-6.	1906-7.
Bombay ..	41·49	42·22	49·16	43·59
Madras ..	2·87	3·01	3·53	3·35
Bengal ..	4·65	3·83	5·13	4·28
United Provinces ..	2·99	2·74	3·44	3·11
Punjab ..	1·15	1·16	1·47	1·27
Central Provinces and Berar	2·46	2·63	2·83	2·42
Total ...	55·61	55·59	65·56	58·02
Native States ..	2·26	2·24	2·53	2·12

In the Bombay Presidency, the Island of Bombay and Ahmedabad are, of course, the two centres of both the spinning and weaving industries. The following comparative table shows the total production of each in the year 1905-6 :—

CRORES OF YARDS.

	Bombay City.	Ahmedabad.
Chadars ..	2·92	0·79
Dhotees ..	2·92	8·45
Printers ...	0·32	1·47
Shirtings ..	14·60	1·26
T. Cloth ..	8·57	0·05

This table clearly shows that Ahmedabad is the great weaving centre of the country for dhotees and printers, while Bombay takes a strong lead in shirtings, T. cloth, chadars, and figured and coloured goods.

The latest available statistics for the production of cloth are for the twelve months of 1906-7. These may be seen in the following table :—

	Crore yards.	Crore lbs.
Chadars ..	4·56	1·55
Dhotees ..	17·06	3·46
Printers ..	2·58	0·54
Shirtings ..	18·60	4·15
T. Cloth ..	10·80	2·26

The total production, including minor varieties, was 57·18 crore yards, equivalent to 12·95 crore lbs. for the twelve months, while the quantity of coloured goods was 2·70 crore pounds.

OUTGO OF PRODUCTION FOR HOME AND FOREIGN CONSUMPTION.

So far the growth and expansion of cotton factories and their production of yarn and cloth have been dealt with. The next essential point to bear in mind is their offtake. How much yarn is kept for domestic consumption and how much for export to foreign ports? What is the quantity of cloth exported abroad; also which are the principal ports where both yarn and cloth find the largest market? As to the exports of yarn. Eliminating the year 1905-6, which was an abnormal year of exports, as has been already stated, it may be useful for the purpose of a correct idea of normal exports to exhibit the figures for the three previous years, together with the names of the principal places. Firstly, then, as to the quantity itself :

EXPORTS OF YARN ABROAD.

1902-3 ..	Crore lbs.	24·85
1903-4 ..	„	25·25
1904-5 ..	„	24·79
Average per annum		24·96
1906-7 (12 months)	Crore lbs.	24·35

The somewhat shorter quantity of yarn exported at the close of 1906-7 is accounted for by the abnormal exports of 1905-6, which amounted to 29·76 crore lbs. At the end of 31st March 1907 it was estimated that the stock of unsold and undelivered bales at Hongkong and the Treaty Ports was 3½ lakh bales of 400 lbs. each. The production of yarn in 1904-5 was 55·59 crore lbs., of which quantities were exported as follows :—

1. BRITISH PORTS—	Crore lbs.
Hongkong	9·76
Straits Settlements ..	0·69
Aden	0·13
Other ports	0·05
Carried over ...	10·63

		Crore lbs.
Brought forward ..		10·63
2. FOREIGN PORTS—		
Chinese Treaty Ports ..	13·15	
Asiatic Turkey	0·38	
Persia	0·23	
Other ports	0·39	
		14·15
Total		24·78

Of these total exports of 24·78 crore lbs. the quantity exported from the Bombay Presidency amounted to 23·31 crore lbs. What remained for domestic consumption, therefore, was 30·81 crore lbs. for purposes of weaving cloth by power and hand looms and for sundry other manufactures. Thus 55 per cent. of the outturn was retained for home consumption, and 45 per cent. was exported.

The total production of the power looms in 1904-5 was distributed as follows :—

For Home consumption	46·21 crore yards.
For Foreign ports	8·74 „
Total ..	54·95 „

The exports were distributed between British and Foreign ports, as under :—

British ports	4·18 crore yards.
Foreign „	4·56 „
Total ..	8·74 „

The goods exported came under the following heads :—

Grey	5·29 crore yards.
White	0·01 „
Coloured	3·44 „
Total ..	8·74 „

Of grey cloth, the exports to the different ports were as under :—

China	1·00 crore yards.
Aden	0·76 „
East Africa	0·76 „
Abyssinia	0·67 „
Asiatic Turkey	0·62 „
Straits	0·16 „
Persia	0·13 „
Egypt	0·12 „

The export of white goods is absolutely negligible. The following countries absorbed Indian coloured piece-goods :—

Straits	1·08 crore yards.
Ceylon	0·82 „
Philippines	0·55 „
Aden	0·22 „
Mauritius	0·15 „
Mekran	0·11 „
Asiatic Turkey	0·12 „

Deducting from the total production of 55 crore yards, the quantity exported abroad, namely, 8·74 crore yards, there remained for home consumption, 46·26 crore yards. The total imports of piece-goods during 1904-5 came to 2,287 crore yards, classified as under :—

Grey	1,210 crore yards.
White	584 „
Coloured	493 „
Total ..	2,287 „

Practically, therefore, the total production of cloth made by Indian mills amounts to but a forty-fourth part of the quantity of British cotton fabrics imported into this country. This one striking fact impresses upon us how immeasurably India is still behind England in her capacity to produce the cotton fabrics required by the mass of the people.

CONCLUDING REMARKS.

But, considering the exceedingly backward condition of the country nearly half a century ago, in point of mechanical and other appliances for the saving of time and labour, and having regard to the fact that the people have only within recent years become alive to the possibilities of an industrial revival, the progress which the cotton industry has made since 1874 is most gratifying. Its future prospects are assured, and there is every reason to believe that the march of progress within the next twenty-five years will be in ever-increasing proportions. Shrewd and enterprising as the majority of millowners are, it may be reasonably expected that they will take a close survey of the existing conditions of the industry and make the most strenuous efforts, with all the energy and resources they undoubtedly possess, to overcome the coming keen competition in the trade. They should be alive to the many imperfections yet to be discerned in the working of their factories. The internal managemnet demands a radical reform and needs to be purged of the many corrupt practices which are a reproach to their industrial morality. Simultaneously, the burdensome system of commission on the production, at the rate of one-quarter-anna per lb., urgently demands replacement by a fair and reasonable rate of remuneration. Every spindle employed for fully 300 working days of the year, yielding an average 20's equivalent to 7 oz. per diem, must pay a commission of Rs. 2 before the shareholders can get their dividend. While the industry is prosperous and profits are large, this burden is not much felt. But it is well known that in the past, during periods of prolonged depression, wrought by diverse causes, such as overstocks, famine, pestilence, currency alterations, external politics and so forth, the commission has proved a great drag on the meagre profits. Indeed, many a mill agent has had to forego a part of his commission, or even the whole, in order to pay a decent dividend and pacify the indignant shareholders, who say that the agents eat the oysters while reserving only the shells to them. It is true that a good many of the concerns projected during the last ten years have adopted the reasonable rate of 10 per cent. on the net profits, but the majority still cling to their bond. With keener competition, and lower prices obtainable for the finished products, it is inevitable that this onerous system of remuneration should be abandoned.

Among other subjects of internal reform, there is the education of the mill agents themselves. An exceedingly large majority are innocent of even a general technical knowledge of the variety of machinery employed for the successful working of their concerns. More or less, they are dependent on their expert overlookers, who are never slow to take advantage of that

ignorance. As a result, the factory's best interests are not conserved. In no other part of the industrial world where textiles are the staple industry, is it found that the employers are at the mercy, more or less, of their overlookers. In India, the employers have not the knowledge, training, and experience which would enable them to form their own judgment on questions of internal economy and on the working of machinery, and to carry on the work accordingly. Perhaps, twenty-five years ago, when education had not made much progress, and when there was almost a total absence of economic consciousness, such a condition of dependence and helplessness was excusable. But in view of the progress of education, and the keen national desire to further develop and expand the greatest staple industry of the country, almost the only one mainly in native hands and financed by native capitalists, it is still astonishing to notice the amount of insufficiency of knowledge among mill agents. Bombay, alone, is the city where such ignorance or semi-ignorance, of a most disheartening character, seems to prevail. It is not so in Ahmedabad, which is the next most important centre of spinning and weaving. Neither is it so in Cawnpore, where the European management is all that is desirable and encouraging. Mill agents in Bombay are, no doubt, men of wealth. They are experts in the purchase of cotton, and in the selling of yarns and cloths. But in no sense are they experts in the internal management and economy of mills. Industrial men from the West, who sometimes visit the city and learn the conditions of the working of a cotton factory are amazed at the ignorance to which we have referred. Their astonishment is great that, in spite of the evident drawbacks, the mills are earning such handsome dividends. The cause is not far to seek. Indian mills, specially those of Bombay, have for long enjoyed almost a monopoly of the profitable yarn-trade with China, which is their chief market. There is, as yet, no formidable competition. The Japanese have no doubt become competitors during the last six or seven years. But till now, that competition has not proved of a serious character. It is inevitable, however, that within the next few years competition should tell on Bombay millowners. Once the struggle has begun, it is bound to become keener year after year. Then alone will Bombay owners find how hard they are hit and how quickly they must put their house in order. With Manchuria at their feet, the Japanese will not only be able to push their yarn but make it impossible for the Indian description to have any entry. Moreover, they are certain to become independent of India for their cotton supply when in another few years the present vast virgin field of Korea is in their hands, to grow the needed grades of the raw fibre. The keener competition which is certain to ensue must compel Bombay millowners to cast about for economies in every direction, which will ultimately reduce the cost of production. For it is certain that the ultimate maintenance of the yarn markets in the Far East will be in the hands of those manufacturers who are best able to sell their products. But best sales are only compatible with cheapness of production. The ultimate determining factor will be the cost, and that competitor will have the greatest hold who produces his yarn at the least cost. It is to be hoped that, in view of the coming struggle, Bombay millowners will take stock of the present situation and endeavour to remove or remedy the many imperfections in their mills, so palpably visible to disinterested onlookers. And one of the most important defects to which they will have to direct their attention is the insufficient knowledge they possess of the details of the management of their own mills. At present there is a kind of dilettantish supervision, which is no supervision at all. As employers, they are more or less under the sway of their superior overlookers, and, what is more to the point, they do not yet appear to have realized the absolute necessity of training up their sons to the business, as millowners do in England and America.

The system of the purchase of stores, too, is highly objectionable, with the vicious practice of illicit commissions. The law recently passed in England against these commissions needs also to be enacted in India. Then, as to the supply of skilled labour, about which there is a general outcry; it appears as though it lay in the hands of the agents themselves to supply the deficiency. If they would follow the good example of Manchester and induce local Universities to confer degrees in practical as well as theoretical spinning and weaving, one great step would be taken towards the end in view. But the University should be fully supported in this matter by the establishment of special Chairs of Textiles and Applied Chemistry. Surely, self-interest demands that a liberal fund should be raised for the purpose, and that the University should be further aided by an annual grant. In the matter of the training of operatives with the view to turning them into skilled mechanics, mill agents are extremely backward and apathetic. Similarly, as to the elementary education of ordinary operatives. It is not known that any organized effort has ever been made to open classes for such persons. Everything is left to Government. No doubt the State has certain functions and responsibilities in the matter of the education of the masses; at the same time it would be too much to expect that the State will come to the aid of millowners in a matter in which their own interests should prompt them to be up and doing. Neither are the agents sufficiently alive to the advantages likely to be brought about by attaching operatives to their respective concerns by promoting their social welfare. Save in a few instances, there are no provident funds for infirmities of age, accidents, and long and meritorious service. Neither is there any machinery for the reception of small savings, which would tend to educate the operatives in the practical art of exercising thrift. Indeed, the ordinary operative of an Indian mill is simply treated as domestic cattle, a bullock or a horse, from whom so much labour per day is to be obtained. Beyond that, no care whatever is taken of his moral and material amelioration. There is no such thing as recreation and amusement for workmen. Employers of labour in India do not appreciate the fact that they incur responsibilities towards their workpeople. Nor do they take into consideration that an operative well paid, well educated, and well cared for in every way, is an exceedingly valuable asset, and an im-

portant element in cotton industry in its physiological, educational, and economic branches. All these defects more or less owe their origin to the semi-educated condition of the millowners themselves. They, in the first place, need to be educated to the higher standard of their obligations and responsibilities towards their work-people, in order to induce that healthy amelioration so sadly needed. Nothing need be said about the hours of labour which have recently formed the subject of official inquiry. This matter requires to be very carefully handled, seeing that there are two sides to this question. But, broadly speaking, there can be no two opinions as to shorter hours of labour than are generally prevalent in the country. It is now an established fact that the shorter the hours, within reasonable bounds, the better is the physical condition of the operative, and the greater his productive capacity. The machinery itself gets greater relief, which is the same thing as a prolongation of its serviceable life, meaning renewals at a longer period—an economic fact which is, in itself, worthy of consideration.

The number of factories whose agents regularly set apart a fixed percentage out of profits for renewals and repairs to their machinery is limited. This neglect works its mischief in two ways and is to be discerned at its worst in times of depression. Without the necessary reserve for replacements and renewals, work has to be done with deteriorated machinery which is therefore less productive and less satisfactory, qualitatively, and liable to extra charges for repairs which have to come out of the annual revenue. In other words, it is contributory towards a diminished and inferior output. And as profits grow smaller, financial embarrassments are deeper, so that in the long run the concern suffers on all sides. The general tendency is to pay a larger dividend and to make but a small provision, if any at all, on deterioration account. This policy works out its own mischief in the long run. In Bombay a few mills have come to grief on this account and have had to change ownerships.

Co-related to the subject is the evil of over-capitalization. Debts are piled up which have to bear a heavier rate of interest than ordinary. Stocks, and even mill machinery and other property, have to be mortgaged, and, unless prosperous seasons follow, and help to get rid of this load of heavily rated borrowed capital and interest, ruin stares a mill in the face. Such ruin came over more than a dozen mills in Bombay six or seven years ago. A company whose finances are bad is liable to plunge deeper and deeper in debt, till some windfall or other lucky circumstance intervenes and extricates it. But, financially, the majority of Indian mills are in a far from satisfactory condition. The keener struggle which is certain to ensue as Japan becomes a formidable rival in the Eastern market will certainly try many an Indian concern, and the best remedy lies in looking ahead and preparing for the contingency. Thus, in every way, it will be seen that Indian millowners should put their house in order. There is a prosperous future yet before them, but the prosperity will, in a great measure, depend on the way in which their mills are conducted.

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The

Jute Industry of Bengal.

Introductory.

THE history of the jute industry in Bengal is curious, inasmuch as the industry in its present shape is modern, while the plant from which the fibre is derived has been cultivated in the province from time immemorial. For very many years doubts existed as to the particular plants which yield the fibre. But a Commission, which was appointed in 1873 by the then Lieutenant-Governor of Bengal, settled this point beyond dispute. The Commission showed that the jute of commerce is yielded indifferently by two distinct species of *Tiliaceæ*, namely, *Corchorus olitorius* and *Corchorus capsularis*. The Bengali word *pát* includes both these plants, and also the fibres obtained from them. It seems that formerly there was considerable confusion as to the different Indian fibre-yielding plants. The same vernacular terms were employed to denote various plants, fibres and cloths, with the result that it is now difficult to determine which particular plant is intended by ancient writers. But for the purposes of the present brief account of the modern industry, a detailed reference to these points is unnecessary. For none of the Bengali words were adopted by Europeans to indicate the fibre obtained from *Corchorus olitorius* or *Corchorus capsularis*. The Europeans introduced a new title, "jute," the origin of which seems to be doubtful. Nor is it an easy matter to say when the term was first used. It is indisputable, however, that as far back as the middle of the seventeenth century, the European nations interested themselves largely in the manufacture of canvas and cordage from Indian fibres. There were at that time factories and ropeworks at several places, chiefly on the Orissa seaboard, under the control of the East India Company. Reference is also made by a Dutch writer—Francis Valentyn—to factories at Palicol below Ganjam, and at Hooghly. But although it is almost certain that the fibre of *Corchorus* was used at these factories, there is no trace of the word "jute." Nor do the earlier travellers in India—*e.g.*, Bernier, Fayrer and Sir Thomas Roe—employ the term. The first mention of it appears to be in the "Commercial Index to the Proceedings of the late Board of Trade in 1796." It is there stated that jute had been sent to the Honourable Court of Directors on more than one occasion. In a despatch, dated 4th December 1800, the Secret Committee of the Court of Directors speak of *pát* and *sunn*, but not of *jute*. So that the word was not then in general use. But soon afterwards it seems to have become popular; and, so far as the Government correspondence is concerned, to have entirely superseded every other name for the fibre. The derivation of the word is, as has been indicated, somewhat obscure. But the generally accepted explanation is that the term *jute* is simply the anglicised form of the Uriya *jhot*, and the ancient Sanskrit *jhat*. At least this is the derivation which has been accepted by the Government of Bengal. It is supported by the fact that the Europeans were first connected with jute in the Orissa district. The vernacular names for the fibre are multitudinous; every district has a special designation for almost each variety; and the same variety is called by different names in different districts.

Area of cultivation.

Jute is cultivated in a large number of the districts of Bengal and Eastern Bengal and to a smaller extent in Assam. Taking the latest available statistics, the principal districts are the following. The figures represent the number of acres which it is estimated were sown during 1907:—

	Acres.		Acres.
Burdwan ..	21,700	Jalpaiguri ..	125,500
Hooghly ..	65,000	Rangpur ..	455,800
Howrah ..	61,700	Bogra ..	200,000
24-Parganas ..	86,400	Pubna ..	154,300
Nadia ..	93,000	Dacca ..	312,000
Murshidabad ..	95,400	Mymensingh ..	847,100
Jessore ..	142,800	Faridpur ..	125,000
Khulna ..	37,500	Backergunge ..	25,500
Cuttack ..	17,600	Tippera ..	310,600
Rajshahi ..	112,000	Purnea ..	264,900
Dinajpur ..	143,000	Malda ..	45,000

In each of the other growing districts the area is below 15,000 acres. The total area under jute cultivation in the provinces is estimated for the current year at 3,883,200 acres. The total yield is estimated at 9½ million bales of 400 lbs. each. The Assam crop is relatively insignificant; the estimated normal area under jute being, according to the official statistics, 55,700 acres. But for the year 1905 the area sown was calculated at about 36,590 acres, with an estimated yield of about 82,800 bales of 400 lbs. The Jute Commission of 1873 published figures of area and yield which are interesting for purposes of comparison. In 1872 the total area under jute in Bengal and Assam was 925,899 acres, and the yield 13,568,485 maunds, or 2,713,697 bales of 400 lbs. In the following year the area was reduced to 517,107 acres, with a yield of 7,756,105 maunds, or say 1,551,221 bales of 400 lbs. Nothing further is needed to show the tremendous advance which the jute trade of the province has made during these thirty-four years.

A fibre closely resembling jute is produced to some extent in the Madras Presidency. It is generally known as Bimlipatam jute, and is derived from the plant *Hibiscus Cannabinus*. Recently it has realised prices equal, or nearly equal, to those obtained for ordinary jute. A crop of the same plant is also raised in the Kistna District, and is known as Kottapam jute.

Uses of the jute plant.

Besides being used for fibre, the jute plant is utilised in numerous other ways in Bengal. Jute leaves and the tops of the plants are sold for use as a pot-herb. A vegetable soup is made from one of the varieties; and another variety is boiled, fried or curried in different ways. An infusion of the dried leaves is also used as a bitter tonic by Hindus.

Methods of Cultivation and Harvesting.

There is no need to enter in detail into the methods of cultivating and harvesting jute. It will suffice to say that the plant seems to be capable of cultivation on almost any kind of soil, although on laterite and gravelly soils it does not flourish. On alluvial soils it gives a good return, but is most productive on a rich loam. Successful cultivation demands a damp climate, without excessive rain, and a high temperature, particularly in the early part of the season. The qualities most popular with spinners are those which are grown on high lands. Low-lying and *chur* lands, or embankments, produce the coarser and inferior kinds of fibre. Sowings commence about the middle of March, and extend to the end of April. The reaping of the crop depends of course upon the time of sowing. Generally, reaping begins about the end of June, and extends to the beginning of October. The methods of steeping the plant and preparing the fibre for the market are described by Dr. Leather, the Agricultural Chemist to the Government of India, in the following notes on a visit to Naraingunge :—

"Plant cut from time of flowering until when fruit forms. Sometimes growing 3 to 6 feet in water, sometimes crop is almost in dry land. In the former case, boys dive down with a sickle and cut it off and build up the retting heap on the spot. If growing on dry land it is cut off and carried to water for retting. The cost of cutting comes to much the same in either case, for in the former the cutting takes more time, whilst in the latter extra labour is spent in carrying the plant to water. Boys take about ten or twelve seconds to cut three or four stems off in four or five feet of water. The stalks of jute are several feet in height. They are covered with leaves and grass to make them sink. The time given to retting varies apparently with the age of the plant. One man said if the plant is cut in flower, the fibre would be ready for stripping in thirteen or fourteen days. Another man, whose jute was cut after flowering, had steeped for twenty days, and it was then hardly ready. The hamlets generally are small and occupy little spaces of land which are just above the water. The cattle stand under sheds, while the land is under water and get no exercise.

"The stripping is carried on at the village site very largely, although some is also stripped in deep water. The man takes one or two (not more) stems, takes off all adventitious roots by running the closed hand down the stem, then gets hold of the fibre at "root-end" of both stems at once, and by passing the fingers along the stem, it is separated from the stem. It is then washed in the water to get most of the green bark away, and hung up to dry. Sometimes it receives a second washing, apparently when very little or very dirty water occurs at the village site. The leaves are not stripped off but appear to rot under the water during the process of retting, almost entirely. The people say that stagnant water is the best and that retting takes place more quickly in it. As a matter of fact they have to use whatever water is nearest, for it would not pay to carry the whole plant far, and also, over a very large area, the land is simply covered by running water."

The Export Trade.

From what has been written in the opening paragraph, it is evident that the modern industry may be considered, roughly speaking, as beginning with the nineteenth century. The plants from which the fibre is extracted had been known in the country from the time of the Mahabharata. But prior to the nineteenth century they were not very extensively cultivated in any of the Bengal districts. At the same time it must be understood that before the advent of the power-loom, the manufacture of gunny bags was a recognised part of the work of the Bengali peasant. Indeed, it is believed that a fairly large quantity of the fibre was produced in the seventeenth and eighteenth centuries, both for home consumption and for coverings for exported articles. There was also some demand for the manufacture of cordage. But there was no export of the raw material. The earliest mention of the export trade occurs in the records of the East India Company. From these it appears that in 1793 no less than 100 tons of *pát* were sent to England. The fibre was thought well of, a Committee of the Court of Directors estimating that 1,000 tons of it could be sold annually at from £40 to £60 per ton. But shipments of this description were of course merely experiments. It was not until 1828-9 that the fibre appears in the official export statistics. In that year 496 maunds 30 seers, valued at Rs. 620-14-9, were exported to the United Kingdom. In the following year 2,293 maunds went to Great Britain, 127 maunds 20 seers to the United States, and 1 maund 26 seers to Batavia. The trade went on steadily from this point. During the year 1834-35 the exports to Great Britain aggregated 31,328 maunds 34 seers 14 ch., valued at Rs. 53,915 5 annas; while about 22 maunds went to Nova Scotia and North America. The progress of the trade during the fifty years 1833 to 1882, is well illustrated by the following table, which shows the average exports for each quinquennium :—

	Average of five years. In cwt.
1832-33	11,800
1837-38	67,483
1842-43	117,047
1847-48	234,055
1852-53	439,850
1857-58	710,826
1862-63	969,724
1867-68	2,628,110
1872-73	4,858,162
1877-78	5,362,267
1882-83	7,274,000

During the ten years 1882-83 to 1891-92 the annual exports were :—

	Cwt. (000's omitted).
1882-83	10,349
1883-84	7,018
1884-85	8,369
1885-86	7,782
1886-87	8,307
1887-88	9,643
1888-89	10,555
1889-90	10,256
1890-91	11,986
1891-92	8,532

From 1892-93 to the present time the following are the figures :—

	Cwt. (000's omitted).
1892-93	10,537
1893-94	8,690
1894-95	12,977
1895-96	12,267
1896-97	11,464
1897-98	15,023
1898-99	9,864
1899-1900	9,725
1900-1901	12,414
1901-1902	14,755
1902-1903	13,036
1903-1904	13,721
1904-1905	12,875
1905-1906	14,480
1906-1907	15,970

Calcutta has always been the great centre of the export trade, although fairly large quantities of jute are also shipped from Chittagong. The fibre passes through a considerable number of hands before it is actually placed on board the export vessel. It is bought from the cultivators by local native dealers up-country. By them it is sold to a class of Calcutta dealers known as balers, who buy the jute in small packages termed drums, and have it pressed in Calcutta into compact bales weighing about 400 lbs. each. By the balers the jute is sold through brokers to the shippers, who in their turn resell it to dealers and spinners in Europe, America and elsewhere. The pressing of the bales is done by hydraulic presses, when the jute has been assorted and the "roots" * (cuttings) removed. There are about twenty hydraulic press houses in Calcutta, with a varying number of presses at each. Some of the largest are managed by joint stock companies, but a number are in the hands of private owners, who bale and press their own jute. From the press houses the jute is conveyed to the exporting vessel. It may be of interest to note that before the introduction of hydraulic power, the jute was pressed by wooden screw presses, worked by hand.

The affairs of the export jute trade are controlled by the Calcutta Baled Jute Association, which was formed in 1892, and of which all balers, brokers and shippers are members. No jute can be sold for export except on the Association contract; and the rules of the Association forbid the members doing business with any non-members. The United Kingdom is one of the greatest consuming markets; and, as is well known, Dundee is the most important jute-manufacturing centre in the United Kingdom. Germany and France and other European countries also take fairly large quantities. In fact, the total exports to Continental Europe are about equal to, or perhaps a little in excess of, those to the United Kingdom. The United States are likewise large consumers, particularly of cuttings. Of the total exports for the year 1904-05, the United Kingdom took 40·1 per cent., Germany 20·1 per cent., France 10 per cent., Austria-Hungary 6·2 per cent., Italy 3·8 per cent., Spain 1·8 per cent. The United States came third with 15 per cent. The value of the exports for the year 1904-05 is calculated at Rs. 120 millions.

In an account such as this it is perhaps unnecessary to enter at length into the question of prices. But a brief summary of the prices realised during the past forty-five years may be of interest. In the early sixties the export trade began to assume large proportions, and in 1861 the average Calcutta price of raw jute per bale of 400 lbs. was Rs. 14 10 annas. At the end of each quinquennial period since, the following were the average values. The percentages in the second column show the variations rather more graphically than the figures of prices. They are calculated on the basis of the year 1873, the particulars for which are printed in italics.

Prices.

Year.	Price per bale of 400 lbs.	Percentage of increase or decrease.
1865	Rs. 17	94
1870	,, 23 as. 3	128
1873	,, *18*	*100*
1875	,, 19 ,, 3	107
1880	,, 29 ,, 8	164
1885	,, 19 ,, 8	108
1890	,, 33 ,, 0	183
1895	,, 33 ,, 0	183
1900	,, 34 ,, 14	194
1905	,, 43	238

All the causes of the recent increase in value cannot be specified with absolute certainty. But there seems to be no reasonable doubt that the great development of the local manufacturing industry is one of the principal causes. It must also be remembered that the demand for jute from all consuming markets is steadily increasing with the growth of the trade of the world.

The native manufacturing industry.

It has been already mentioned that the fibres obtained from the different fibre-yielding plants in Bengal have been from an early period utilised by the people of the province. The native manufactures resolved themselves into three main classes—cordage, cloth and paper. The first ranged from the thinnest twist to ropes sufficiently thick for hawsers. The cloth was of various qualities, adapted to the different purposes for which it was used. There was a thick closely-woven gunny, which was known as *gùn*, *tát* or *chat*. The different varieties of this cloth were used for packing seeds, sugar, rice and other produce. There was also a thin closely-woven fabric, which was common in parts of Maldah, Dinajpur, Rangpur, and among the Coch and other aboriginal tribes near the foot of the Himalayas. It seems to have been used for wearing apparel. There was further a third coarse variety, which was used for the sails of country boats, and for packing bulky rticles. The weaving process is thus described by Babu Ramcomal Sen, in a well-known paper, which appeared many years ago in Vol. II of the Transactions of the Agri-Horticultural Society :—

"Seven sticks or *chattee* weaving posts called *tanâ parâ* or warp are fixed upon the ground, occupying the length equal to the measure of the piece to be woven, and a sufficient number of twine or thread is wound on them as warp, called *tanâ*. The warp is taken up and removed to the weaving machine. Two pieces of wood are placed at two ends, which are tied to the *ohari*, *okner*, or roller; they are made fast to the *khoti*. The *belut*, or treadle, is put into the warp; next to that is the *sarsul*; a thin piece of wood is laid upon the warp called *chupari* or regulator. There is no sley used in this, nor is a shuttle necessary; in the room of the latter a stick covered with thread called *singa*, is thrown into the warp, as woof

* It should be mentioned that in the jute trade the term "roots" has not its ordinary botanical signification. It means the lower woody portions of the stems of the plant: the "cuttings" are these portions when cut off.

which is beaten in by a piece of plank called *beyno* and as the cloth is woven, it is wound up to the roller. Next to this is a piece of wood called *khetone*, which is used for regulating and smoothing the woof; a stick is fastened to the warp to keep the cloth straight."

An interesting general account of the native industry is quoted in Dr. Royle's treatise on "The Fibrous Plants of India." It was written just fifty years ago by a Mr. Henley, whom Royle describes as "an intelligent merchant from Calcutta."

"The great trade and principal employ of jute," says Mr. Henley, "is for the manufacture of gunny chuts or chutties, *i.e.*, lengths suitable for making bags. This industry forms the grand domestic manufacture of all the populous eastern districts of Lower Bengal. It pervades all classes, and penetrates into every household. Men, women, and children find occupation therein. Boatmen in their spare moments, husbandmen, palankeen-carriers, and domestic servants, everybody in fact, being Hindoos—for Mussulmans spin cotton only—pass their leisure moments distaff in hand, spinning gunny twist. Its preparation, together with the weaving into lengths, forms the never-failing resource of that most humble, patient, and despised of created beings—the Hindoo widow,—saved by law from the pile, but condemned by opinion and custom for the remainder of her days, literally to sackcloth and ashes, and the lowest domestic drudgery in the very household where once, perhaps, her will was law. The manufacture spares her from being a charge on her family—she can always earn her bread. Amongst these causes will be discerned the very low prices at which gunny manufactures are produced in Bengal, and which have attracted the demand of the whole commercial world. There is, perhaps, no other article so universally diffused over the globe as the Indian gunny bag.

"All the finer and long-stapled jute is reserved for the export trade, in which it bears a comparatively high price. The short staple serves for the local manufactures, and it may be remarked that a given weight of gunny bags may be purchased at about the same price as a similar weight of raw material, leaving no apparent margin for spinning and weaving."

The power-loom industry.

With the coming of the power-loom, the indigenous manufactures naturally declined. In 1872, when the Commission which has been already referred to was making investigations, statistics were obtained showing the quantities of fibre consumed by native weavers and rope-makers. The figures are, of course, more or less approximate, but they are interesting as showing the extent of the native industry at that time. For the Dacca District the estimate for the year was 90,000 maunds; for Rangpur 50,000 maunds; for Murshidabad 38,000 maunds; for Maldah 25,000 maunds; Mymensingh 12,000 maunds, and Hooghly 120,000 maunds. But this latter quantity may have included some of the mills which had then come into existence in the Hooghly District The first mill had been in fact established a good many years before. It was located at Rishra near Serampore, and was started about 1855 by Mr. Geo. Ackland, who owned coffee plantations in Ceylon. The original title of the concern was the Rishra Yarn Mills Co., which was subsequently changed to the Rishra Co., Ld. In 1858 a Company styled the Borneo Co., Ld., which had been formed to develop the island of Borneo, established another mill at Barnagore, about four miles from Calcutta. This concern was called by the name of the Company, but in 1872 its name was changed to the Barnagore Jute Factory Co., Ld., by which designation it is still known. The year 1862 witnessed the establishment of the Gourepore Mill, which has since become one of the largest and most important. In 1869 the India and the Serajgunge Mills were started. Four years later a considerable expansion of the industry took place, four new mills being opened. These were the Budge Budge, Fort Gloster, Champdany, and Seebpore. Still greater extensions followed in 1874, when Samnuggur, Oriental (now Union), Howrah, Hastings, Rustomjee Twine (now Central), Clive and Asiatic (now Soorah) were started. Of these perhaps the most remarkable was the Hastings Mill, which is at present the only large privately-owned jute mill in Calcutta. It was and is the property of Messrs. Birkmyre Bros., who were the proprietors of a mill at Greenock. Mr. Wm. Birkmyre came to the conclusion that jute spinning and weaving were more likely to be successful on the banks of the Hooghly than on the banks of the Clyde. He accordingly transferred his mill to Calcutta, establishing it in the neighbourhood of Serampore. It of course derives its name from Warren Hastings, in whose villa the manager of the mill lives. A London company established the Ganges Mill in 1875; and two years later a new Calcutta company, the Kamarhatty, was formed. These rapid extensions resulted in the supply of gunnies soon outstripping the demand. The consequence was that in 1880 there was a great depression in the trade, and several mills were forced into liquidation. These were the Calcutta Jute Mills, the Oriental Jute Mills, and the Rustomjee Twine Co. The first-named of these three was the concern which was originally known as the Rishra Company. It had been resuscitated in 1870 as the Calcutta Jute Mills. After the collapse in 1880, it was bought by the Champdany Co. for Rs. 5 lakhs, and was re-started as the Wellington Mills, by which name it is still known. At about the same time the Oriental Mill was bought by the Union Co. for Rs. 3,50,000; and the Rustomjee Twine Co., by Mr. Moran, who converted it into the Ghoosery Jute Co. This concern was afterwards bought by Mr. Chanda Ramjee of Bombay, and eventually it became the Central Jute Mills Co., Ld., under which name it still exists. In 1882-83 the Victoria, Hooghly, Kanknarrah, and Titaghur Mills were established. They were followed by the Lower Hooghly and the Gondalpara, and in 1895-96 by the Khardah, Standard, National, Alliance, and Anglo-India. The Delta Mill (into which the old Serajgunge concern was merged) was established in 1899, the Kinnison and the Arathoon in 1900, and the Dalhousie in 1903. The Alexandra, the Naihati and the Lawrence, which began not long since, and the Belvedere, Kelvin, Reliance and Auckland, which are still more recent, bring the list up to date.*

It would not be an easy matter to obtain complete statistics of the number of looms and spindles, and of the production of cloth and bags, in the very early days of the industry. But in the seventies, when the mills were just beginning to develop, the Rishra Mill had about 260 looms, the Borneo about 400, the Gourepore about 200, and the India about 100. The expansion, which took place about that time,

* Many of the particulars in this paragraph were published in 1896 by Sir John Leng, for whom they were compiled by the Editor of *Capital*.

has been already remarked upon. It was so great that by 1878-79 as many as twenty-one mills had been established, with 4,645 looms and 65,882 spindles. The nominal capital of these concerns was, according to the official figures, about Rs. 12 mils. They must have employed about 25,000 workpeople. The progress, which has been made since, is well illustrated in the following table, which shows the position at the end of each quinquennial period :—

Year.	Mills.	Nominal capital.	Persons employed.	Looms.	Spindles.
1879-80	22	Rs. 1,28,00,000	27,494	4,946	70,840
1884-85	24	Rs. 1,29,00,000	51,902	6,926	131,740
1889-90	26	Rs. 1,26,45,000	59,541	7,704	156,866
1894-95	28	Rs. 2,47,07,250	74,357	9,638	199,757
1899-1900	34	Rs. 3,58,00,000	102,449	14,119	295,302
1904-1905	38	Rs. 4,66,80,000	133,162	19,991	409,170
1905-1906	39	Rs. 5,06,80,000	144,879	21,986	453,168

The table gives a very fair idea of the enormous growth of the trade during the last quarter of a century. But in order to appreciate this growth properly, it is necessary to quote a few statistics showing the production of gunny cloth and bags. In 1863-64, when the first mills were getting into working order, 28,123,524 pieces of gunny cloth and bags were exported from Calcutta. Their value was estimated at Rs. 48,27,358. In the following year, the total was 52,030,341 pieces, and the value Rs. 53,09,577. From that time onward the trade extended rapidly, as the following statement will show :—

1869-70	...	Pcs.	30,535,034	Rs.	70,64,609
1874-75	Bags	Nos.	56,864,546	,,	1,42,07,380
	Cloth	Pcs.	14,654	,,	1.24,478
1879-80	Bags	Nos.	75,968,724	,,	1,56,26,741
	Cloth	Yds.	6,875,910	,,	8,10,166
1884-85	Bags	Nos.	121,428,904	,,	2,17,50,963
	Cloth	Yds.	19,923,884	,,	17,95,253
1889-90	Bags	Nos.	133,274,213	,,	3,22,85,674
	Cloth	Yds.	44,178,915	,,	47,65,717
1894-95	Bags	Nos.	190,189,181	,,	4,21,34,118
	Cloth	Yds.	111,828,703	,,	1,08,71,741
1899-1900	Bags	Nos.	211,440,570	,,	4,43,91,980
	Cloth	Yds.	313,340,781	,,	2,78,64,231
1904-1905	Bags	Nos.	263,797,790	,,	6,31,46,525
	Cloth	Yds.	591,196,923	,,	5,27,03,413
1906-1907	Bags	Nos.	320,291,633	,,	9,25,87,180
	Cloth	Yds.	710,412,867	,,	8,47,49,458

The foregoing figures include both the foreign and the coasting trade. The value of the latter is returned, for the year 1904-05, as Rs. 1,76,22,611, and of the former as Rs. 9,82,27,715. Taking gunny bags and cloth together, 32·3 per cent. of the total value of the foreign trade was shipped to the United States, 21 per cent. to South America, 11·1 per cent. to Australia, 7·6 per cent. to the United Kingdom, and 5·8 per cent. to China. Of recent years the exports to South America have greatly developed, owing mainly to heavy crops in Argentina, and to the activity in the nitrate trade in other South American countries.

The official statistics of power-loom gunny prices are fairly complete from 1861. In that year the price per 100 bags was Rs. 19. Adopting the same principle as was followed in regard to jute prices in a preceding paragraph, the following are the figures for each quinquennium since that year. As regards these figures, it should be mentioned that, with the expansion of the trade, the varieties of bags are becoming increasingly numerous. The price quoted is consequently the average of a considerable number of different qualities of bags.

Year.	Average price per 100 bags. Rs.	Percentage of increase or decrease, Base year 1873.
1865	24	109
1870	28·8	130
1873	*22·0*	*100*
1875	22·8	102
1880	19·12	90
1885	20·2	91
1890	24·14	113
1895	24·4	110
1900	23·12	108
1905	27	122

Indian Jute Mills' Association.

Jute Mill owners and agents in Bengal combined as far back as 1884 into an Association, which is now known as the Indian Jute Mills' Association. From its inception the Association has been actively engaged in promoting the welfare of the industry, and has undoubtedly done much to advance its interests. There are now thirty-five mills on the list of members, with 26,931 looms at work. All manufactured goods are sold, and all raw jute is bought by mills, on Association forms of contract, which have been drawn up and accepted by the members.

Conclusion.

But little more remains to be said. Jute is now to Bengal what cotton is to Bombay, with this advantageous difference, that while cotton is grown in various parts of the world, jute is a practical monopoly of this province. Attempts which have been made to produce the fibre in other countries have not been so far successful; and there is therefore every reason to anticipate that the Bengal industry will continue to develop, as the demand for a cheap covering continues to expand.

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The Calcutta Trades Association.

THE oldest public body in Calcutta is the Calcutta Trades Association, which came into being on the 5th July, 1830, just twenty-four years after the establishment of the Bank of Bengal, and eight years before the foundation of the Calcutta Chamber of Commerce, which is now merged into the Bengal Chamber of Commerce. The immediate cause of the formation of the Association was a public recommendation from the then Chief Justice of Bengal, the Hon. Sir Charles Edward Grey, when sitting as a Commissioner of the Insolvent Court in the case of a Subaltern of the Bengal Army; on which occasion Sir Charles Grey expressed himself as follows:—"I would advise the Tradesmen of Calcutta to form themselves into an Association, and to investigate the means of those to whom they may give credit, and to employ some person to watch the proceedings of all cases through the Insolvent Court." But the great progressive cause which led to the formation of the Association was the system of indiscriminate, almost unlimited credit which had for many years obtained in the country, to the serious prejudice of the honest tradesman, and to the manifest disadvantage of that portion of the public who had been in the habit of paying for what they purchased.

The first public meeting was held on the 12th June, 1830, at the rooms of Messrs. Leyburn & Co. This meeting was the outcome of a private conference of tradesmen, held on a previous occasion as the immediate result of the advice tendered by the Chief Justice of Bengal, and above set forth. It is interesting to note that of the twenty-six Calcutta firms represented at this meeting, eight are still in existence. These are Messrs. Dykes & Co., Messrs. Hamilton & Co., Messrs. Mackenzie, Lyall & Co., Messrs. Ranken & Co., Messrs. Scott Thomson & Co., Messrs. Steuart & Co., and Messrs. W. Thacker & Co. (now Messrs. Thacker, Spink & Co.), and Messrs. Watts & Co. The business transacted at the first meeting was mostly of a formal nature, and a Committee was formed, comprising the following members:—Messrs. F. H. Burkinyoung, J. Coull, J. W. Duncan, W. T. Gibbon, C. S. Hadow, Jno. Hastie, Geo. Jessop, H. McKellar, Geo. Parbury, Geo. Shearwood, Samuel Smith, R. S. Thomson, and W. H. Twentyman. The Committee at once set to work and convened a General Meeting for the 5th of the following month. The Calcutta trading firms were circularised, and each establishment was requested to send at least one member to attend the meeting, which was duly held at the Exchange Rooms. Mr. Samuel Smith, Proprietor and Editor of the *Harkaru* newspaper, was called to the chair, and in the course of his address, after explaining the origin and nature of the proposed Association, went on to say that the terms of their dealings must be brought into accord with the times, and that they must endeavour to adopt measures for the realisation of their outstandings. The outstandings at that time were large, and the amount due to ten establishments, which had handed in memoranda to the Chairman, was no less than 50 lakhs of rupees. In these ten establishments, several of the largest firms were not included, nor were the three Auction houses then in existence included in the list, and the Chairman remarked that he was led to believe that the total amount of the debts due to the tradesmen of Calcutta was not less than a crore of rupees, or, at the then rate of exchange, upwards of a million sterling.

The main objects of the Association, as set forth at the meeting, were as follows:—(1) "To encourage the adoption of the system of ready money payment, which prevails in all other parts of the world, and which enables the tradesmen to sell at lower rates than those of Calcutta can afford to do, from the prevalence of the ruinous system of indiscriminate credit which has obtained for many years, to the serious injury of the tradesman, and to the manifest disadvantage of the public.

(2) "To define the terms of credit when credit is allowed, and to prescribe measures calculated to ensure payment, and guard against future loss where the terms of that credit are violated.

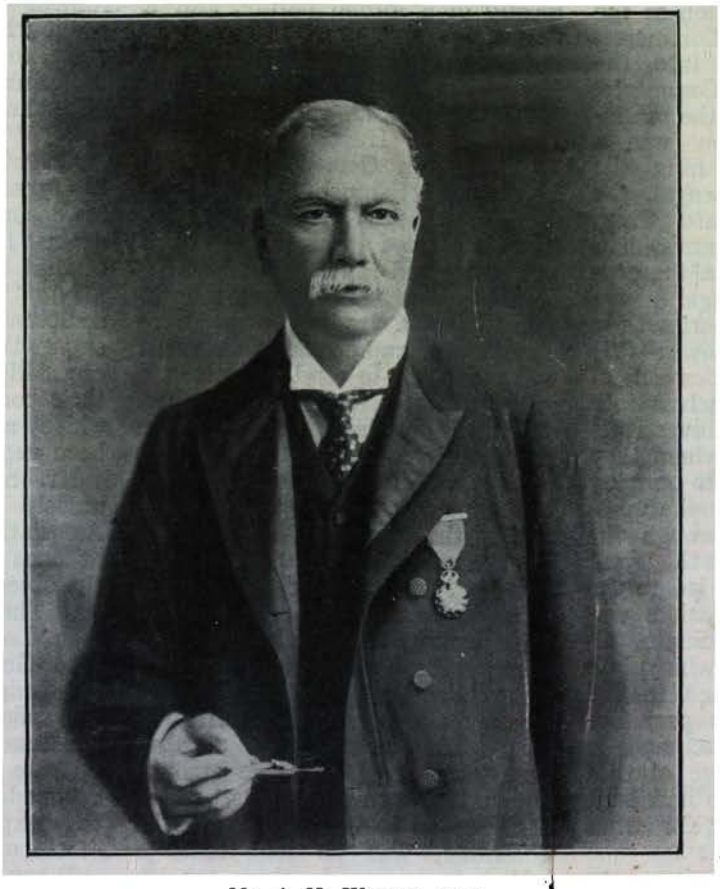
(3) "To encourage a friendly communication amongst persons engaged in business in Calcutta, especially on subjects involving their common interests; an object which appears hitherto to have been neglected."

Mr. Samuel Smith was unanimously elected President of the Association, and the Committee at once turned their attention to the objects for which it was founded. The patronage of the Right Hon. Lord William Bentinck, Governor-General of India, and of the Judges of the Supreme Court was solicited. That of the Governor-General was readily granted, but the Judges, for official reasons, declined. In doing so, however, they expressed their high approval of the objects of the Association.

When the Association was first established, the members were divided into grades of Senior Masters, Junior Masters, Fellows, Foremen and Apprentices. The head officer was, up to February, 1831, designated President, but it was then considered that "Master" would be more in unison with the practice that obtained in similar bodies in Europe, and was consequently adopted. The first Master was Mr. Samuel Smith, and twenty years later—in 1850—out of respect to him as the original President and the first Master of

the Association, he was unanimously requested to accept the office of Permanent President, with functions not interfering with the duties of the Master.

From its commencement the Association, while never losing sight of the objects for which it was primarily established, has steadily kept in view the importance of attending to matters of public interest, and the Association as a body has always enjoyed the respect of the Government for its ready and broad-minded advice on the many questions of magnitude on which it has been consulted. One of the very first matters to engage its attention was the provision of means whereby dishonest debtors who applied for the benefit of the Insolvent Act might be effectually opposed. The expenses involved in an opposition were, at that time, extremely heavy, and the result, in the majority of cases, anything but such as was calculated to convey the warning desired. In response to a memorial sent up by the Association to the Commissioner of the Insolvent Court on the subject of mitigated costs, a new Insolvent Act was passed which provided for the payment of these costs out of the insolvent's estate, unless such opposition proved to be frivolous and vexatious. Among important matters of more general interest that engaged the attention of the Association during the earlier years of its existence, may be mentioned postal reform, the conservancy of the city, municipal government and municipal reform generally, public and private charities, the state of vagrancy in the city, the state of the ghauts, the insecurity of life and property on the river, and reforms and changes in the currency. The observance of native holidays, the registration of coolies and hackeries, the Statute of Limitation, the advertisement and conduct of Sheriff's sales, the state of the Police, the prevention of nuisances, the subject of arrest under mesne process, the state of the Law of Apprenticeship and the evils resulting therefrom, the mode of remittances from the mofussil, and the unnecessary delays and inconveniences experienced in the export, the import, and the transit of goods through the Calcutta Custom House, were also matters of public interest that early formed subjects of discussion and representation by the Association.



Mr. A. H. WALLIS, C.I.E.

At the end of 1834 a memorial was addressed to the Governor-General (Lord William Bentinck), setting forth the objects of the Association and praying to be recognised as a Public Body, with authority to address the Government when they desired and had sufficient and reasonable cause for so doing. This request, so far as it lay in the power of the Governor-General, was granted on the 29th December of the same year. Early in the following year, Lord William Bentinck's term as Governor-General expired, and his departure from India was made the occasion for an Address, signed by A. Rogers, Master, on behalf of the members of the Association, in recognition of the countenance the Association had received at his Lordship's hands in its endeavour to protect trade interests and to promote the comfort and security of the inhabitants of the Metropolis. Lord William Bentinck, in reply, said that the Association had, from its commencement, his best wishes for its success. The state of credit stood upon a most rotten footing; the fraudulent and unprincipled alone profiting by it, while the honest buyer and seller were the victims. "It was not possible," he said, "for the single efforts of the most honest tradesman to overcome the practice; but the whole Trade have effected a thorough reform, most creditable to those who devised and accomplished it, and most useful to the public at large." So far the Governor-General had dealt only with matters directly connected with the immediate and separate interests of the members of the Association; but he went on to refer to objects of a more public nature in which their interest had taken practical shape, and with special reference to municipal reform, which even in those early days occupied a prominent place in the programme of the work before the Association, he pointed out that in the rapidly-changing society of the East, it was only large associations that could ensure permanency of system, uniformity of execution, and perseverance in carrying it on and incorporating with it all useful improvements.

In those days, when the control of the affairs of Bengal were left to a Governor-General, with the whole management of the empire on his shoulders, or to an accidental Senior Member of Council, the Calcutta Trades Association was the only public body that could voice well-informed opinion, and act as interpreter between the Government and the people. That its services were recognised and appreciated by so far-seeing a ruler as Lord William Bentinck is worthy of record, as are also his farewell words to the members of the Association. He said:—"Having been for many years a warm advocate for reform, I have contemplated with pleasure the great benefits derived from the larger admission into the councils of the kingdom of the intelligence and patriotism of those classes which have previously been in a great degree excluded. A somewhat similar feeling is excited by the present occasion. It is the exaltation of a class, a new infusion of independence and usefulness working for the benefit of all, which delights me. You represent, and worthily, the respectability, the knowledge and enlightened principles of the same class in our own country. Your connexion with every branch of business enables you to judge how all separately and collectively are affected by the public institutions and by the measures of those who preside over them; and yours is an impartial and independent evidence, of which, if favourable, any Government would have reason to be proud."

Several years before Lord Dalhousie issued his famous Minute in 1853, which recognised the necessity of constructing railways to connect the chief provinces and cities of India, and laid the foundation of the existing system of railway communication, the Association had been alive to the fact that without the material appliances which facilitate and cheapen the means of communication and production, there could be no real progress, and in 1844 the subject of the introduction of railways into India was taken into consideration. After considerable discussion it was resolved that the Association was unanimous in its belief that a railway upon some eligible line, taking in its course the most important stations along the Valley of the Ganges, up to Mirzapore, could not but realise great advantages to the country, and be the means of developing products and resources as yet unknown, in addition to affording facilities to the transit of merchandise and produce. A number of years elapsed, however, before these visions were realised, and it was not until old John Company (with all its virtues, which were many, and all its faults, which were not a few, including a rooted objection to improved means of communication), had disappeared from the scene, that any real advance was made.

In 1845, the Association, anxious to aid, so far as circumstances would permit, any effort for the adoption of measures calculated to improve the moral and social condition of the rising generation, made a substantial contribution towards the establishment of the "Calcutta Lyceum," with a recommendation that such portion of it as was necessary might be expended in the purchase of apparatus for a course of lectures on "Hydro-Electricity." But a lack of public spirit, together with the restrictions placed by the Government on the officers who were capable of giving attractive scientific lectures, soon put an end to a project which had been started under the most auspicious circumstances. Further opposition was encountered from the Government in 1848-50, over a matter of some importance which occupied the attention of the Association, arising out of the discovery of defalcations in the funds of the Ecclesiastical Registrar regarding the assets of certain insolvent estates, received by the Registrar but not accounted for by him. Government declined to accept any responsibility in the matter, and after much futile discussion, an advertisement was inserted in the newspapers calling upon those who had suffered owing to the defalcations to co-operate with the Association to obtain relief. Further, every effort was made to obtain from the Administrator-General a correct list of the claimants on estates who had suffered by the defalcations of the Registrar; but here again nothing but opposition was encountered, and the Government of the day made no effort to bring its own officials to book, or to advance the enquiry in any way whatever. A petition was eventually prepared and forwarded to the House of Commons, on behalf of the Association, and as a result, a Select Committee was appointed, which recommended that the claimants should be satisfied out of the funds on account of unclaimed estates; and that in the event of any of the claimants to such estates coming forward subsequently, their claims should be met out of the revenues of the country. In accordance with these recommendations, a despatch was sent out from the Court of Directors, in August, 1850, directing that measures should be immediately taken to carry out the suggestions made by the Select Committee; and "the Judges of Her Majesty's Court in Calcutta" were required to assist in the preparation of a legal enactment whereby the heirs of unclaimed estates, should they subsequently come forward, might not find their rights endangered in any way. This was one of the many questions taken up and carried to a definite issue, in which the Association had no pecuniary interest to serve, either as a body, or individually as members.

The following twenty years covered a period, perhaps the most important of any in the history of India in its political, social, and commercial aspects, since the advent of the British. First, in 1854, was created a separate Lieutenant-Governorship for Bengal, contemporary with which arose demands for every sort of public improvement, moral and material, in accordance with the requirements of civilised life. Then, while the energies of the Government were being devoted to the newly-organised system of administration, and a vigorous impulse was being given to material progress, came the revolution which for a time paralysed our Government throughout a large part of India, followed eventually by the transfer of India from the Company to the Crown. Then, in 1870, the Suez Canal, which revolutionised the main lines of international traffic, was opened. Throughout this eventful period the Calcutta Trades Association took an active part in bringing to the

notice of the Government the ever-increasing needs of the general public, as also those of the community which it more specially represented. Municipal affairs bulked largely in its programme, and owing to the rapid and continuous increase in size and population of Calcutta, the importance of an improved system of supervision and control over its sanitary arrangements, its conservancy, and the other local details appertaining to the good management of large cities, became apparent. It appeared to the Committee appointed for the purpose of formulating the views of the Association that the remedy for existing evils would be found in the appointment of a differently constituted Board, into whose hands the exercise of municipal powers should be entrusted, and in which the rate-payers might have a controlling voice; and a memorial to this effect was submitted to the Lieutenant-Governor (Sir John Peter Grant) on the 11th May, 1861. This led to the appointment by Government of a mixed Committee under Mr. Seton-Karr to enquire into the matter, the Association nominating Mr. F. Jennings, at that time Master, as its representative on the Commission. Another member, Mr. Lazarus, was later on requested by the Lieutenant-Governor to join the Commission. The appointment of this Commission led up to events which form a most interesting chapter in the municipal history of Calcutta, and the immediate upshot of it was that a new Act was passed in 1863 which vested the municipal government of the city in a Corporation, consisting of all the Justices of the Peace for Bengal, Behar, and Orissa, and all Justices of the Peace for the town, with a salaried Chairman, appointed by Government, in whom all executive authority was vested. Many other matters, either directly or indirectly connected with the municipal arrangements of the city, also occupied the attention of the Association within the period above specified, and the market arrangements, the drainage, the water-supply, and street-lighting were all exhaustively dealt with. As a matter of fact, many of the conveniences enjoyed under the present system of municipal government are largely due to the thorough and practical manner in which the preliminary details were threshed out by the various Sub-Committees from time to time appointed by the Association. Among matters of more immediate moment to its members may be mentioned Postal rates, the Customs' Act, dâk bhangy charges, various duties on imported goods, fraudulent breaches of contract, the Income Tax, the Insolvency Bill and the Insolvency Court, the responsibility of the Post Office for goods entrusted to it, Partnership Law in India, and the delay in payment of Money Orders. The Association was also consulted on the subject of the Gold and the Paper Currency, which resulted in the extension of circles for the Paper Currency, and the introduction into India in 1864 of the sovereign, at a fixed exchange value of ten rupees.

The late Mr. J. B. KNIGHT, C.I.E.

In all public measures connected with the trade of the Port the Association has been active, and it was one of the first public bodies to memorialise the Government on the question of the construction of a bridge across the Hooghly. In 1867 a further memorial was submitted, urging that the shareholders of the East Indian Railway should be induced to give their consent to the erection of a bridge, and this memorial was forwarded by Government to the Board of Directors of the East Indian Railway, with a strong recommendation from Government. The result was that Mr. Rendel, Consulting Engineer to the East Indian Railway Board, received instructions to report on the matter, and the outcome of his report was the sanction by the Secretary of State for India of the existing floating bridge. It was not, however, until 1871 that the Act was passed which empowered the Bengal Government to proceed with the work, and the bridge was not opened to traffic until October, 1874. When, in 1870, a Bill for the appointment of Commissioners for making improvements in the Port of Calcutta was introduced into the Bengal Council, the several provisions of the Bill were carefully considered by the Committee of the Trades Association, and certain alterations they found it necessary to suggest were ultimately adopted. The Bill was passed into law the same year, and Mr. J. B. Knight, a Past Master, who had previously represented the Association on the Bengal Council, was nominated as one of

the Commissioners for carrying out the provisions of the Act.

With the appointment, in 1861, of a paid, whole-time Secretary, may be said to have commenced the practical working of the system of Trust Accounts, which forms one of the most important and useful departments of the Association to the present day. It had long been felt that if a public body, such as the Trades Association, could intervene between Creditor and Debtor, gaining the confidence of both, it would prove a great advantage, and save much trouble all round; but it was not until 1861 that the system of placing accounts in the hands of the Association for liquidation by mutual consent, was fairly organised.

In January, 1862, the Bengal Legislative Council was first established, and in the following year, one of the four non-official European Members of the Council nominated by the Lieutenant-Governor, was chosen to represent the Calcutta Trades Association, a custom which is maintained to this day. Mr. F. Jennings was the first recipient of the honour, and his appointment as the representative of the Association on the Council was regarded not only as a proof of the influence possessed by the Association, but as a guarantee that the interests of the non-official classes would be studied in the future policy of the Government. In 1864, the high rate charged for advertisements by the leading newspapers of the day led the Committee to consider the question of establishing a newspaper that should offer a good medium for advertising at a moderate cost. The immediate result was the formation of a Limited Company for the publication of the *Indian Daily News*, the first number of which was issued on the 1st August, 1864.

A proposal came before the Government for the amendment of the Indian Limitation Act of 1877, at the end of 1907. With this proposal we shall deal in due course. It is merely introduced at this point to show that the same question occupied the attention of the Association many years ago, with regard to Act XIV of 1859, and that from 1861 to 1870, the Indian Limitation Act was constantly before the Committee in some shape or form. In the latter year, a new Bill was published, on which the opinion of the Association was invited. It was observed with regret that the Bill contemplated no alteration in the period of limitation prescribed in the original Act for suits in respect to goods sold by retail; but, that principle being affirmed, the Bill was valuable as removing certain doubts as to procedure in certain cases. Some alterations were suggested in the sections regarding the computation of the time a debtor was absent from British India, and the renewal of debts that had become barred by the Statute, and the Bill as amended was passed.

The earlier work in which the Association took its share has been reviewed in some detail, because it is as well to recognise that many of the public works still in process of construction and development are part of the great scheme of material betterment originated to a large extent by the Association. The sanitary and municipal arrangements of the city, for instance, have always been well to the fore in the programme of work that the Association has resolved to do its best to see through, and its insistence, in and out of season, on the necessity for the adoption of sanitary measures in accordance with modern requirements had its influence with the old Justices of the Peace in whom, in 1863, was vested the municipal government of the city; and who carried out much useful preparatory work at a time when Calcutta, according to contemporary writers, was a far from desirable place in which to dwell. Much of the work initiated by those old Justices is far from complete, but that is not the fault of the fighting members who have from time to time represented the Association on the Calcutta Municipal Corporation, for they, in conjunction with the representatives of the Bengal Chamber of Commerce and the Port Trust, have done much practical service in advocating the needs of the city.

On the more recent work of the Association there is no need to dwell at length. As a body, it has been consulted by Government on all important public matters, Imperial or Local, and whether the question be one concerning the great Codes that cover all India, or regarding the Currency or the Tariff, in which the whole Empire is concerned, or on the smaller, but equally important subject of local needs, the views of the Association have always been sought, and the practical value of those views has been acknowledged by the highest authorities on many occasions. Among other questions that have been before the Committee, in which the views advanced have prevailed, may be mentioned the improvement in the emoluments and privileges of the Judges of the High Court, the settlement of the system which has provided Calcutta with a service of electric trams, and the costly but admirable undertaking, the extension of the Presidency General Hospital. Much attention has been bestowed of late on such questions as the Law of Limitation, Imprisonment for debt, the Bankruptcy Act, the Indian Factories Act, the Merchandise Marks Act, the Indian Tariff Act, the Contract Act, and the working of the Police Courts. There are many other subjects of importance on which the Committee of the Association is still engaged, prominent among which may be mentioned the proposal to further amend the Law of Limitation, which is now before the Government, and the proposed establishment of the V.-P. P. system between India and the United Kingdom. These are both big questions, which intimately affect every member of the Trades Association. With regard to the proposed V.-P. P. system, the same proposal was scotched, but not killed, nearly a quarter of a century ago. The Law of Limitation, also, is an old friend, that has been under consideration on many previous occsaions, until the original Law has been altered almost beyond recognition. Concerning the present proposed amendment, the Committee of the Association suggests certain alterations whereby the interests of the creditor will be safeguarded.

The first Annual Dinner of the Trades Association was held in 1861, and from that year up to 1884 it was continued without interruption as a yearly function. The guests included representatives

of the Civil, Military, and Medical Services, the Bar, Press, and Commercial interests, and gradually, as time progressed and the Association gained in importance, the occasion was utilised as affording an opportunity for authoritative official pronouncements. Following 1884, however, there ensued an interval of fifteen years, during which no Dinner was held, and the position occupied up to that time by the Trades' Dinner was usurped by the feast held annually by Scotsmen, on the Day of their Patron Saint. In 1899 the Annual Dinners of the Trades Association were resumed, and the function bids fair to recover its lost ground as an occasion on which high officials may ventilate their ideas on public questions. At the Dinner held on the 29th January, 1908, the principal guest of the evening was the Chief Justice of Bengal, the Hon. Sir Francis Maclean, and he seized the opportunity for the purpose of making a notable reference to the rumours as to the proposed partition of the High Court.

Mr. H. ELWORTHY, C.I.E. (*Lieut.-Col., 1st C.V.R.*)

OFFICIALS OF THE ASSOCIATION.

In the Annual Report for 1850, the Association recorded its appreciation of the valuable services rendered by Mr. Samuel Smith, whose liberality on its formation, steadfast adherence to its welfare and interests, and ready assistance under circumstances which required the aid of his experience and judgment, had won for him the respect and esteem of every member. As a mark of respect and approbation he was in August, 1850, as mentioned before, elected Permanent President of the Association, he having been appointed President in 1831, when the title of the head executive officer was changed from President to Master. The list of Masters, from the foundation of the Association to the present time, is as follows:—

In 1830 and 1831, Mr. Samuel Smith; 1832 and 1833, Mr. F. H. Burkinyoung; 1834 and 1835, Mr. Alexander Rogers; 1836, Mr. F. H. Burkinyoung; 1837, Mr. R. Scott Thomson; 1838, Mr. Samuel Smith; 1839, Mr. W. Turner; 1840, Mr. G. F. Remfry and Mr. G. Shearwood; 1841, Mr. Henry Burkinyoung; 1842, Mr. R. J. Lattey; 1843, Mr. G. F. Remfry; 1844, Mr. Henry Burkinyoung; 1845 and 1846, Mr. R. C. Lepage; 1847 and 1848, Mr. J. P. Parker; 1849 and 1850, Mr. C. J. Pittar; 1851, Mr. W. Spink; 1852, 1853 and 1854, Mr. W. Roberts; 1855, Mr. R. Sloley; 1856 and 1857, Mr. W. Roberts; 1858 and 1859, Mr. T. W. Payne; 1860, Mr. G. F. Remfry; 1861 and 1862, Mr. F. Jennings; 1863 and 1864, Mr. J. B. Knight; 1865, Mr. John Mackintosh; 1866, Mr. Charles Lazarus; 1867, Mr. Gordon Robb; 1868, Mr. J. G. Bowerman; 1869, Mr. F. F. Wyman; 1870, Mr. Charles Kelvey; 1871, Mr. Boughton Newman; 1872, Mr. T. W. Brookes; 1873, Mr. J. B. Knight; 1874 and 1875, Mr. Robert Allardice; 1876, Mr. F. Jennings; 1877, Mr. F. McAlpin; 1878 and 1879, Mr. Clifford J. Brookes, F.R.G.S.; 1880, Mr. J. E. Caithness; 1881, Mr. Geo. Irving; 1882, Mr. D. J. Zemin; 1883, Mr. H. Pratt; 1884, Mr. A. H. Wallis; 1885, Mr. C. F. Larmour; 1886, Mr. H. Pratt; 1887, Mr. J. G. Womack; 1888, Mr. H. W. Hallett; 1889, Mr. A. Acton; 1890, Mr. H. T. Ottewill; 1891, Mr. J. G. Womack; 1892, Mr. W. T. Spink; 1893, Mr. A. H. Wallis; 1894 and 1895, Mr. E. F. Longley; 1896 and 1897, Mr. T. W. Spink; 1898, Mr. Donald McGregor; 1899, Mr. H. Elworthy; 1900, Mr. W. J. Bradshaw; 1901 and 1902, Mr. F. A. Larmour; 1903 and 1904, Mr. E. B. Eden; 1905, Mr. W. T. Grice; 1906, Mr. W. Smith; 1907, Mr. J. S. Harris, who was re-elected Master for 1908.

The Association has been represented on the Council of His Honour the Lieutenant-Governor of Bengal by the following Members:—Mr. W. Spink, Mr. W. Geo. Parbury, Mr. F. Jennings, Mr. J. B. Knight, Mr. F. F. Wyman, Mr. T. W. Brookes, Mr. J. E. Caithness, Mr. Geo. Irving, Mr. H. Pratt, Mr. A. H. Wallis, Mr. C. F. Larmour, Mr. J. G. Womack, Mr. T. W. Spink, Mr. W. T. Spink, Mr. H. Elworthy, and Mr. F. A. Larmour. Of these, the Order of the Companionship of the Indian Empire has been bestowed on Mr. J. B. Knight, Mr. A. H. Wallis, and Mr. H. Elworthy.

Early in 1861, it was decided that the growing importance of

the Calcutta Trades Association rendered it necessary that a Secretary should be engaged whose time should be entirely devoted to the conduct of its affairs, the former system of paying for merely occasional services having been found unsatisfactory. In 1861 Mr. Leman Marks was appointed as the first whole-time Secretary, and three years later he was succeeded by Mr. John Lindley. In 1868, the present Secretary, Mr. E. Hickie, was appointed, and throughout the forty succeeding years Mr. Hickie has rendered services of the very greatest value to the Association.

THE TOWN HALL, CALCUTTA.

Commercial & Industrial.

The AHMEDABAD ADVANCE, Ld. This is a comparatively new undertaking having been started as recently as July 1903, under the Agency of Messrs. Tata & Sons. Although it is practically in its infancy, and has not had time to come into line with the other mills of the Tata's in point of profits, it has already paid 8 per cent. dividends on the original share value, after making ample provision for depreciation, etc. The paid-up capital of the Company is Rs. 7,50,000.

Messrs. AHMUTY & Co., Manufacturers, Metal and Hardware Merchants, Contractors and Agents, 6, Church Lane, Calcutta, rank as one of the oldest business houses in the city, having been established in the year 1815. Little is known of its early history by those now connected with the firm, except that it started purely as a Ship-chandlery store, in the days when sailing ships alone visited the port, after a protracted voyage round the Cape. Government at that time found it necessary to charter and fully equip such vessels here for conveyance of its troops home, and it was a comparatively easy matter, in the absence of competition, to build up a prosperous business. It was in connection with such Government contracts for troops proceeding to England, and stationed in this country, that the firm later on established a Bakery and Distillery for the production of biscuits and rum as Commissariat stores, and the two factories known as the "Albion Works" enjoyed almost a monopoly from Government in these lines. It was, indeed, in those early years of the firm's history, that the foundation of its subsequent prosperity was laid. As the business developed and attention was given, in the progress of events, to industries outside its scope hitherto, an Iron Foundry and a Ropery were acquired; and later on, when the introduction of steam produced a marked change in the conditions of trade all over the world, and when in consequence Government became less liberal in its support of the lines indicated above, the new industries were made to compensate for the falling-off in such contracts, and the Ropery has since continued to form a prominent feature in the manufacturing business of the firm.

It is not quite certain when the ropery, known as the Shalimar Rope Works, was first established, the earlier records in connection with the same having been destroyed by fire; but the property came into the possession of the present proprietors more than half a century ago, since when the Works have been enlarged and renovated at intervals, until in 1905-6 they were practically rebuilt, and modern rope-making plant with new engines and boilers, all of the latest type, were laid down at considerable expense. The Ropery thus equipped is now one of the largest and finest in India. Besides the Manager, Assistant Manager, and Engineer, the number of hands it constantly employs, day by day, is about 180, and at busy times they are increased. The average monthly outturn at the time of writing this article is something under 100 tons, in spite of keen competition from other similar local factories, but the machinery is capable of doubling this output. The Shalimar Rope Works are yearly under contract to supply manila and country hemp, coir and wire ropes and lines, to the Indian Government Dockyard, the Ordnance, and Supply and Transport Departments; to Arsenals and the Indian Government Factories; to State Railways, Steamship and other Companies. Nor are the products of the Ropery confined to India; they find an outlet in the East in Burma, the Straits Settlements, Siam, Java, Borneo, Sumatra, Hongkong, the Philippine Islands, Australia and New Zealand; and in the West in Karachi, Bushire, Aden and South and East Africa. These facts alone testify to the excellent quality of the rope manufactured at these Works; but apart therefrom, the firm has been awarded several medals for superiority at the various Exhibitions of local industries held at intervals in various parts of India; latest amongst which is the Gold Medal secured at the Indian Industrial Exhibition of 1906-7.

On the Ropery premises is the 'Paulin Factory, which, although it in no way forms an integral part of the Rope Works, is yet an allied industry, where 'paulins, tents, awnings, boat and wagon covers, and canvas screens are made up and supplied largely to the several Government Departments, Steamship Companies, and other large bodies mentioned in the preceding paragraph; not to mention smaller concerns and private enterprises in Calcutta, Madras, Bombay and Burma.

Apart from the foregoing, the firm's principal business lies in metals, hardware, machinery and tools of all kinds for structural,

engineering, agricultural and other purposes; in paints, oils and varnishes; and in all manner of requisites for mills, factories, workshops and planting industries. In these lines also the chief supporters of the firm are Government in its several Departments, Railways, Municipalities, Steamship Companies, and famed saw-mill machinery of the most modern type, for which they have been awarded sixty Gold Medals at various Exhibitions, besides highest Awards and Diplomas.

Messrs. The Silicate Paint Co., Colthurst & Harding and Conrad Wm. Schmidt, all of London, for paints and varnishes, the excel-

factory is owned by the Nicholson File Co., for a class of tools which are steadily gaining ground in India owing to cheapness combined with excellence of quality.

Messrs. The Willesden Paper & Canvas Works, Ld., London, for a specially prepared waterproof and rotproof canvas, which is much

Messrs. Ahmuty & Co.'s Premises, Church Lane, Calcutta.

other large commercial bodies; and although it does a retail trade, this branch of the business is comparatively small.

Amongst several valuable agencies held by the firm, the following are the most prominent:—

Messrs. Kirchner & Co., of London and Leipzig, for their world-lence of which is recognised all over India and Burma.

Messrs. W. B. Brown & Co., Liverpool, for steel wire (Lang's Lay) rope for hauling and mining purposes, which are second to none in use in India.

Messrs. G. H. Barnett & Co., of Philadelphia, U. S. A., whose file in demand by Government for military and other purposes, and is yearly coming more largely into use.

Messrs. Platts & Lowther, London, for compensating split packing, which the firm has lately introduced into India, and which is steadily working its way into favour

with engineers against other packings which have so long held the market.

Messrs. Schuchardt & Schutte, of Berlin, for lathes, drills and machine tools generally.

Messrs. S. Crawshaw & Sons, Dewsbury, England, for furnishings of all kinds required in jute mills.

Messrs. Storry, Smithson & Co., Ld., Hull, for economic, protective and anti-fouling compositions for ships' bottoms.

It will thus be seen that the business of Ahmuty & Co. is a large and comprehensive one, embracing a various assortment of stock of reliable quality of English, American and Continental manufacture, from which it is possible at all times to comply with Government or other demands at the shortest notice. The progress of the firm, from its inception almost a century ago, up to the present time, when it has earned the confidence of the official and commercial classes, has been steady and prosperous, as a result of painstaking labour combined with the sterling qualities of integrity and tact.

ALLAHABAD BANK, Limited: Established 1865. The Allahabad Bank, which now holds a leading position among the Banks of India, was originally started with a capital of three lakhs of rupees, of which less than two lakhs was paid up. In the first half year only, ending 31st December 1865, were the Bank's operations unsuccessful, no dividend being paid for that period, but in the following two years a considerable development took place in the Bank's affairs, and the first dividend of 7 per cent. declared at the end of 1907 was only a sign of the great and continued prosperity which the Company has since enjoyed. In 1875 dividends had increased to 12 per cent., and since that year have consistently stood at 15 per cent. year by year till 1906, for which year 17 per cent. was paid. The capital in the same period has been quintupled and now stands at 15 lakhs of rupees, paid up. The working capital, including deposits, which in 1865 was a little over 2½ lakhs, has expanded in a very much greater ratio, showing the well-earned confidence of the public in the institution, and now stands at over four crores,—to be precise, Rs. 4,19,75,000. The reserve fund has been built up year by year in a manner calculated to gain stability in the public regard. It now exceeds in amount the paid-up capital, standing at 17 lakhs of rupees. It has held this relative position since the year 1892, when the paid-up capital was four lakhs and the reserve fund Rs. 14,000 more. The reserve has now been built up to 22 lakhs, by the addition in 1907 of 5 lakhs, being the premium on the issue of shares. The Bank has also a Pension Fund which now amounts to Rs. 1,17,000; to this Rs. 20,000 is being added annually. The reserve and pension funds are held in Government Securities.

The great prosperity of the affairs of the Allahabad Bank is shown by the balance sheet of the 31st December 1906. The year's operations resulted in a gross profit of Rs. 13,30,313-9-0. Depositors profited to the amount of Rs. 8,51,494-14-6, the balance, after paying establishment, available for dividends being Rs. 2,91,903-13-4. The headquarters of the Bank are at Allahabad, but branches have been established at Cawnpore, Lucknow, Calcutta, Delhi, Jhansi, Bareilly, Naini Tal and Jubbulpore. In addition there are also sub-agencies at Amritsar, Hapur and Hathras. The London Bankers are—The Union Bank of London and Smith's Bank, and at Bombay, the Chartered Bank of India, Australia and China. All the agencies and sub-agencies are prosperous. Messrs. A. F. Ferguson & Co., of Bombay, are the Chartered Accountants to the Bank's affairs. For some time past the Allahabad Bank has carried on large transactions with the Government of India under arrangements with the Court of Wards. In this connection the Bank's operations have been beneficent to the landed gentry of Upper India, many of whom have reason to remember with gratitude the assistance afforded to them by the Allahabad Bank, which has enabled them to procure loans at reasonable rates of interest, thus saving their property from the exorbitant usury of the private money-lenders. The General Manager of the Bank is Mr. Rutherford Deans, Allahabad.

Mr. ROBERT RUTHERFORD DEANS (*Captain, United Provinces Light Horse*), General Manager and Director of the Allahabad Bank, Limited. Mr. Deans, like so many of the successful business men of India, is a Scot, being a native of Hawick in Roxburghshire. Before coming to India he had a thorough training in the best banking traditions of Scotland, having served for eight years in the British Linen Bank. In the year 1865 he joined the Allahabad Bank, Limited, as Manager. At that time the Bank had only been started some six months and was struggling along in a very precarious state. It was due to Mr. Rutherford Deans' genius for banking affairs that the Bank was lifted into a secure position, and in two years after his taking up the management, dividends were paid, which rapidly increased till now the Bank's shares are among the best paying securities in India. Mr. Rutherford Deans has been associated with the Allahabad Bank for the whole of its paying career, and still holds the post of General Manager. Mr. Deans has utilised his capacity for affairs in other directions as well as Banking. When many years

Mr. R. R. DEANS.

ago the affairs of the N.-W. P. Club (now the Allahabad Club, Ld.) were in confusion, Mr. Deans was invited to join the Committee, and undertook the task of putting the office in order with such success that the concern has been prosperous ever since. Mr. Deans is an ardent volunteer. He joined the Allahabad Light Horse on the first establishment of that well-known Corps, and was one of the first officers elected by the members. Subsequently his name was sent up for the command of the Corps and he was duly appointed. For many years he spared neither time nor expense in increasing the strength of the Light Horse. Having thoroughly mastered the details of drill and being an excellent horseman, he was able to put the Corps into a high state of efficiency. The excellent annual reports of the Corps testify to Captain Deans' able command. At one inspection of all the troops in garrison, the fine show made by the Allahabad Light Horse as the Corps went by at the gallop, drew special encomiums from Sir George White, then Commander-in-Chief. During the Lieutenant-Governorship of Sir Auckland Colvin, Captain Deans was appointed Honorary Aide-de-Camp, and held that position through the tenure of the three succeeding Lieutenant-Governors, Sir Charles Crosthwaite, Sir Antony MacDonnell, and Sir James La Touche. When he decided to retire to England, he received the thanks of the Lieutenant-Governor, and his name was transferred to the Supernumerary List.

The ALLAHABAD BANK, Limited, Allahabad. Branches at Calcutta, Delhi, Jhansi, Lucknow, Naini Tal, Bareilly, Jubbulpore. Sub-Agencies at Amritsar, Hathras and Hapur. Established 1865 at Allahabad. The Allahabad Bank is a purely Indian concern, Registered under Acts XIX of 1857 and VII of 1860. It has been remarkably successful in its operations throughout Bengal and North-West India, as the following statement of its position shows. Started with a paid-up capital of Rs. 2,00,000, the Directors have consolidated its position till now its working capital stands at Rs. 3,91,18,000 in 1906, having been increased by ten lakhs from the previous year. The Reserve Fund has been built up till it has reached the figures of the capital account, one lakh was added to it last year, making it Rs. 15,00,000 in all. The Bank's progress has been very uniform since its founding. For years past it has paid dividends consistently at the rate of 15 per cent. per annum. In the same manner the state of the Reserve Fund has increased in solidity, each year marking an increase in the Bank's resources. While the distribution of profits has remained unimpaired. The increase in the working capital including deposits has been equally steady, over 150 lakhs having been added in the last five years. The gross-profits for the half year ending 31st December 1905, amounted to Rs. 11,59,768 and after deduction for establishment and interest on deposits there remained Rs. 2,60,421 to distribute. The Bank paid Rs. 7,30,068 in interest on deposits during the above half-year. The Aallahabad Bank holds a deservedly high position among Indian Banking Houses. Mr. R. Rutherford Deans is the Manager.

The AUSTRIAN LLOYDS STEAM NAVIGATION Company was established in Bombay in 1870. The local offices of the Company are in Sassoon Buildings, Church Gate Street, but the Head Office is at Trieste. The Company is under mail contract with the Austrian Government. Before the opening of the Suez Canal, the activity of the Company was limited to the Mediterranean Sea and the near East, but it afterwards extended its service to India, China and Japan, maintaining frequent sailings between Trieste, Karachi, Bombay, and Calcutta, as well as with China and Japan. The Company owns a fleet of 68 steamers, aggregating a total tonnage of about 210,000 tons register, ranging from 370 to 6,500 tons per steamer. The Company's services offer, after those of the P. & O., the most frequent and rapid communication with Europe. Besides these lines, there are also steamers sailing between Trieste, East Africa and South America.

Mr. E. Scarpa, the General Agent of the Bombay Branch, came to Bombay in 1890 as an assistant. In 1896 he was appointed Agent, and in 1904 he was further promoted, and appointed Agent-General. For some time he was a member of the Committee of the Chamber of Commerce, where he still represents his Company.

Messrs. BAKER, ANSON & Co., Government and Railway Auctioneers and Coach Builders, Cawnpore; sole proprietor, Mr. Albert Clement Jones. Established in the year 1884. The business premises of the firm are situated on the Mall, Cawnpore, one of the best situations in the town, opposite the Memorial Gardens on the main road to the Civil Lines and Cantonments. They carry on the business of auctioneers, principally for the Government and Railways, but also do a good deal of business in this line with private people. They are also manufacturers of harness, saddles, etc., and coach builders and repairers, utilizing good English material. In this line they turn out very excellent work in the most modern style. Their paints and varnishes are imported direct from London. They have a great reputation for their harness and saddlery work as well, which is generally esteemed equal to the best English manufacture. They also carry on business as blacksmiths, owning and working a shoeing forge; and, in addition, they act as general commission agents.

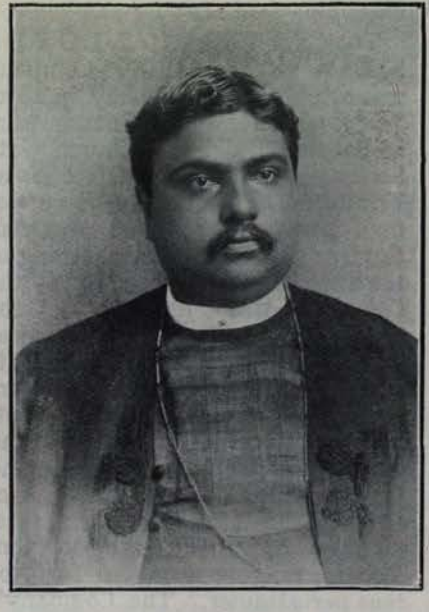
Mr. ALBERT CLEMENT JONES, sole proprietor of the business of Baker, Anson & Co., was born in 1854, at Cawnpore, and educated at St. Peter's College, Agra. His father was the late James Clement Jones, Superintendent of the Bridge of Boats by which the troops crossed the Ganges during the Mutiny of 1857. Mr. Jones, senior, was largely interested in forestry, and was a contractor to Government. On his retirement he was in receipt of pensions from both civil and military departments. Mr. A. C. Jones joined his late father in business, dealing with contracts, building, forestry, etc. The father and son were responsible for many public and private buildings in the adjacent districts. On the death of his father, Mr. A. C. Jones succeeded to the business.

Babu BENOY CHANDRA BANERJEA, Proprietor of the firm of Banerjea Bros. & Co., Plumbers and Contractors, Calcutta, was born at Telieniparah, in the District of Hooghly, in 1863. He received a sound education in the local school, whence he matriculated

Babu B. C. BANERJEA.

in 1882. He then moved to Calcutta, where he continued his studies at St. Xavier's College. His first intention was to enter Government service, but this proving distasteful, he started a plumbing and contracting business on his own account in 1888. Starting with a small capital, by energy and assiduity he soon made the business a success, and it continued to grow in extent and public esteem, until in 1894 he was able to purchase the business of the firm of Messrs. Banerjea Brothers & Co., who dealt in hardware, etc. This addition to his business very much enlarged the scope of the firm, which was henceforth called Banerjea Bros. & Co., and placed it in a prominent position among the plumbing firms of Calcutta. In 1903 the business had so increased that the energetic proprietor was enabled to build the fine three-storeyed premises at present occupied by the firm at 45/2/1, Wellington Street. From this time forward, Babu Benoy Chandra Banerjea became the sole proprietor, and devoted his attention to building contracts, in which he has met with unqualified success. The firm numbers among its regular clients the Administrator-General of Bengal and Mr. Robert Belchambers, late Registrar of the High Court of Calcutta, and receiver, administrator and trustee of numerous large estates in the city. Amid the pressure of business Babu B. C. Banerjea has found time for literary work. He is the author of a volume of poems and a domestic novel, which have found favour among his countrymen.

Messrs. GANGADHAR BANERJEE & Co., Military Contractors to the Government of India, first started business in 1840. The firm was originally founded by Babu Shib Chandra Chatterjee, a wealthy man of Kidderpore, under the style of Shib Chandra Chatterjee & Co., and the management was entrusted to two young relatives of the founder. They succeeded so well that they were eventually taken into partnership, and the name of the firm was then changed to that under which it is at present known. Later



Babu N. G. MOOKERJEE.

on, Babu Bissessur Mookerjee, one of the above-mentioned relatives of the founder, became sole proprietor, and the business has remained in his family ever since. Babu Bissessur Mookerjee came of a high-caste Brahmin family in the Hooghly District, and he received his early education in his village school. He was possessed of much force of character, and his energy and honesty gained for him the respect and good-will of the military officers with whom he was brought into

The late RAI AKHIL CH. MOOKERJEE.

contact. He gradually extended his business, opening communication with several large commercial houses in other countries, with which the friendly relations established by him continue to the present day. He was an orthodox Hindu, and a firm believer in the performance of Vedic rites. When he found his health failing, he brought his eldest son into the business, from which he virtually retired. The remainder of his life was devoted to religious purposes and ceremonies, foremost among which was the performance of the rare ceremony of *Annameru*, on which he expended a lakh of rupees. When he died, he left to his family a large fortune, and his eldest son, the late Rai Akhil Chandra Mookerjee Bahadur, became the head of the firm. He had received his education at the Hindu School and the Presidency College, where he showed promise of a successful academic career; but his aspirations in this direction were not destined to be gratified, for at an early age the sole management of the firm fell on him.

He did much to advance the interests of the business, and he not only maintained its reputation and prosperity, but found leisure in the midst of a busy life to devote his attention to public affairs. As a Municipal Commissioner he took an active part in the Council proceedings, and he was an Honorary Magistrate for a number of years. As a Freemason he was held in high esteem. He took high masonic honours, and was Master of Lodge "Anchor and Hope." With regard to his work as a contractor to the military authorities, General A. Walker, formerly Director-General of Ordnance in India, wrote in 1897 :—"In bidding you farewell, I take the opportunity of recording the fact that I consider you the best Ordnance Contractor on this side of India." Akhil Chandra was made a Rai Bahadur in 1893. He died at Simla in 1899, aged 49. Babu Nani Gopal Mookerjee, the present head of the firm, is the son of Rai Akhil Chandra, and since the death of his father he has been conducting its affairs with considerable ability. In addition to his hereditary business as a military contractor, he has entered upon extensive operations in rice, jute, and timber, all of which are in a flourishing condition under his management. Among noteworthy operations in which the firm has been of service to Government, may be mentioned the China Expedition, for which a very large number of tents were supplied at a short notice; the Burma Campaign; and the Sonthal Insurrection. During the Mutiny the firm also rendered valuable services to Government, the nature of which has been recorded in Kayes' "History of the Sepoy War."

Messrs. J. C. BECHTLER SON & Co., Manufacturing Silver-smiths, Jewellers, Watchmakers and Opticians, Allahabad, Lucknow and Mussoorie. This business was established in Allahabad by Mr. Jouquin Carl Bechtler, at first in a very small way, for the manufacture of jewellery and silverware, and was the first business of the kind to be established in India away from the Presidency towns. The business rapidly expanded, and in ten years' time had so far advanced that it was necessary to erect the present large and handsome premises with a frontage of 120 feet. The firm has attained a deservedly high reputation in the manufacture of rings and jewellery of all descriptions, challenge-cups, shields, medals, and all kinds of sporting prizes, masonic jewellery, etc. In the year 1887 Messrs. Bechtler Son & Co. were appointed jewellers and silversmiths to His Honour the Lieutenant-Governor of the United Provinces, and have held that patronage ever since. They carry large stocks of diamonds, rubies, pearls, and every kind of precious stone. For twenty-two years consecutively they have issued a yearly catalogue, showing all the novelties in their line at moderate prices. Mr. J. C. Bechtler is a native of Switzerland, and was apprenticed to the watchmaking trade in his native country. After completing his five years apprenticeship he travelled in France, Austria and Switzerland, perfecting himself in his trade. In 1880 he came to India where he has established himself with such success. He is an expert in all departments of his business. Mr. Bechtler is a member of the Switzerland Geographical Society and the publisher of a journal devoted to jewellery and precious stones, "The Diamond." The branch of the business of Messrs. Bechtler Son & Co. at Mussoorie was opened in 1889, and a large stock of assorted precious stones and jewellery is carried there. There is also a well-fitted workshop for manufacturing purposes. The firm take a great interest in sport, and contribute largely in the way of cups, shields, etc., for trophies.

BEECHWOOD ESTATE, DARJEELING.

This beautiful estate is situated in the very best part of Darjeeling, practically just between the railway station and the Mall. In 1894 the Darjeeling Municipality wanted to purchase the place for the purpose of making a public park out of it, but as the present proprietor, Mr. C. Forstmann, outbid the Commissioners, the property fell to him. Immediately afterwards the Government, at the instigation of the Municipal Commissioners, built a road right diagonally across the estate, which road is now known under the name of Mackenzie Road, and although it may be a fine road, it certainly has cut the estate right in two.

At the time when the present proprietor purchased the estate there was only one house standing in the whole grounds comprising 14 acres. This house, known as Beechwood House, is one of the oldest in Darjeeling. Immediately after the purchase Mr. Forstmann built a small house for himself near the railway station, known as Malepartus, which has since been considerably enlarged and has been for some years occupied by *the Century Club*, the members of which belong to the native gentry visiting Darjeeling during the season. Building operations properly did not begin until autumn 1898, when the five big houses on Auckland Road were built, known as Villa Rheinstein, the proprietor's present private residence, containing also the office of the Estate, Donkya Villas, Nos. 1 and 2, the Kopje and the White House. These houses were just finished when Darjeeling was overtaken by the cyclone, causing the disaster of the 26th September 1899.

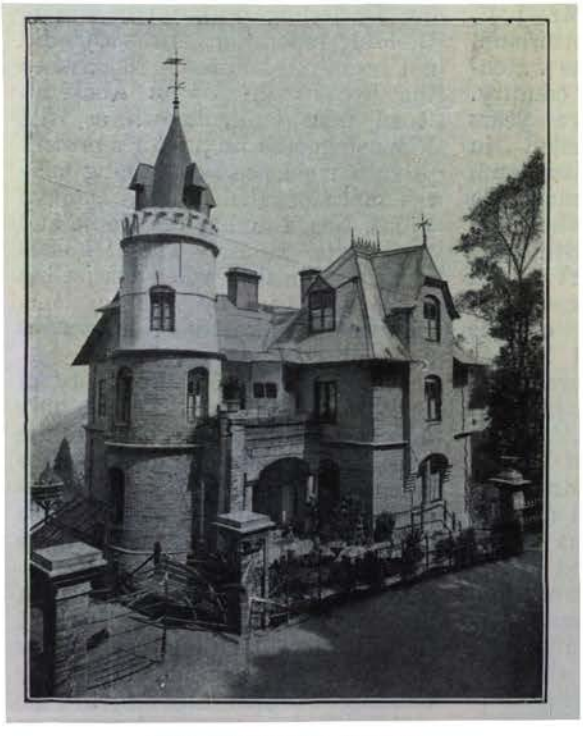
It speaks well for the safety of Beechwood Estate, that the only damage done on the whole estate was the demolition of the two green-houses situated below Malepartus, but not the slightest damage was done to any of the dwelling-houses.

As soon as Darjeeling had a little revived from the effects of the disaster, building operations were recommenced, and during the building season 1901-1902 the middle-sized cottages known as Mackenzie Road, Nos. 21, 23, 25, 27 and 29 sprang up, as well as a line of 8 small shops on Mackenzie Road. Alloobarie Cottage had been built already in 1900. In 1902 the two nice houses known as Rhododendron Villas, Nos. 1 and 2, were built. At the same time the proprietor, seeing the disadvantages of the very rough native labour available in the district, got out a fine set of woodworking machines, by means of which he was able to do better, quicker and cheaper work than by the old method; and so the Beechwood Estate Factory was started, where

not only building timber is prepared, but also furniture of a good class and at moderate prices is made.

In the year 1902 not less than 22 small wooden cottages were built on American principles, which are let at very moderate rents and are suitable for people with small means. They are all built with double walls and are consequently cool in the summer and warm in winter, and their special advantage is, that they are *very dry*, as the wood cannot soak in any damp like the stone and brickwork.

In October 1903 the Rink was commenced and finished in June of the next year, so that it was opened on the 4th of June, and immediately well patronised by all classes. Extensions had to be added, first of all the fine billiard room, containing three first class billiard tables, all made by Lazarus & Co., which was finished in the beginning of August of the same year; in October the large stage, one of the largest in the East, was added, but as it could not be ready for the Pujahs of the same year, it was not opened and used until the following June. It has since been used with great success by professionals, as well as by the Darjeeling amateurs, who were formerly fearfully cramped on the small stage of the Town Hall.



THE BEECHWOOD ESTATE.

Since then only one house has been added on the estate, known as Holly Lodge, situated on Lloyd's Road. There are now altogether 40 houses ranging from the smallest cottages containing 2 rooms, to residencies suitable for the wealthiest, and full particulars can be had on applying to the proprietor, or his Calcutta agent. Any tenants can always rely on being treated generously and with all reasonable consideration.

The last addition to the estate is a printing press, and a newspaper known as the *Darjeeling Chronicle*, which is under European management, turns out first class printing work on the latest electrically driven machinery.

The estate has also got its own dynamo and storage batteries to provide all houses with electric current.

Messrs. BEGG, SUTHERLAND & Co. The Cawnpore branch of the firm, originally styled Messrs. Begg, Christie & Co., later Messrs. Begg, Maxwell & Co., have for the last thirty years been known as Messrs. Begg, Sutherland & Co. They are chiefly interested in the sugar manufacturing industry, which has developed considerably under their able management. The firm are the Managing Agents of the Cawnpore Sugar Works, Limited, with a Refinery at Cawnpore and a Sugarcane Factory and Estates in Sarun; and of the Champarun Sugar Company, Limited. Messrs. Begg, Sutherland & Co. were the concessionaires for the Cawnpore Electric Lighting and Tramway Scheme and are the Agents in that city of the Indian Electric Supply and Traction Company, Limited.

Among other enterprises in which the firm are interested is that of the manufacture of brushes. The Cawnpore Brush Company, Ld., which is under Messrs. Begg, Sutherland & Co.'s management, holds large contracts with Government Departments, notably the Military Ordnance Department.

In addition, Messrs. Begg, Sutherland & Co. are sole agents in the United Provinces and Behar for Messrs. Orenstein and Koppel's well-known Light Railway material, and the firm also represent Messrs. Kilburn & Co.'s Electric Department.

Mr. ALEXANDER BLAKE SHAKESPEAR received his education at Berkhamstead Grammar School, and came out to India at the commencement of 1894 with the intention of following a career in indigo, then in the heyday of its prosperity. However, he was offered and accepted an appointment with Messrs. Begg, Sutherland & Co., of Cawnpore, which was then being managed by the late Mr. W. B. Wishart, who was also Secretary to the Chamber of Commerce. A few years later, Mr. Shakespear became connected with the Chamber as Assistant Secretary, and eventually succeeded to the Secretaryship upon Mr. Wishart's death in 1904. In the same year he was admitted a partner of Messrs. Begg, Sutherland & Co., and has since managed the affairs of that firm in Cawnpore.

MR. A. B. SHAKESPEAR.

The BANK OF BENGAL (Lahore Branch) was established in 1866, the head office being at Calcutta. The business of the Bank at this branch, which is conducted on the ordinary principles of banking transactions and on an extensive scale, includes within its scope large dealings with Karachi. Mr. Claude Willie Carbery is the Acting Agent of the Lahore Branch.

Messrs. BHAGWANDASS & Co., Bankers, Dehra Dun and Mussoorie. This business was established early in the 19th century at Mussoorie and Chakrata, and a branch was opened in 1856 at Dehra Dun (made afterwards the Head Office of the business), under the present name and style, by the father of the present proprietors, the late Lala Bhagwandass, and Lala Khush-hal-Rae. The former died in 1874 and the business was subsequently divided, the sons taking the Dehra Dun and Mussoorie business, and Lala Khush-hal-Rae, the Chakrata portion. In 1884, Mr. Jugmandavdass took charge of business as senior proprietor, with his younger brother,

Mr. JUGMANDAVDASS.

Mr. Mansumratdass, working under him as junior proprietor. They do a very large and extensive business throughout India in general banking, are also large house and landed proprietors, and have a lucrative timber business at Dehra Dun and other places. They are also proprietors of the Saharanpur banking business, carried on in the name and style of Lallas Santlal and Bhagwandass, their grandfather and father respectively. They have agencies in the principal towns in India, and one in London as well.

Mr. Jugmandavdass was born at Saharanpur in 1864 and educated privately. He has had a wide and varied experience in financial matters, having been connected with banking and mercantile pursuits since 1879. He has for many years taken an active interest in public affairs, has been a

Mr. MANSUMRATDASS.

member of the Municipal Board and an Honorary Magistrate at Dehra Dun since 1885, and has filled the position of the Vice-Chairman of that body for several terms. Mr. Jugmandavdass is well known for his many charitable gifts and the great interest he takes in educational matters. He developed the Dalanwala estate, purchased by the firm in 1903, and this may now be well termed "another Dehra, chiefly for the Europeans."

Mr. Mansumratdass undertook the supervision of the business at Mussoorie in 1890, and has been a member of the Mussoorie Municipal Board since 1900. In other respects he has also followed the example of his brother.

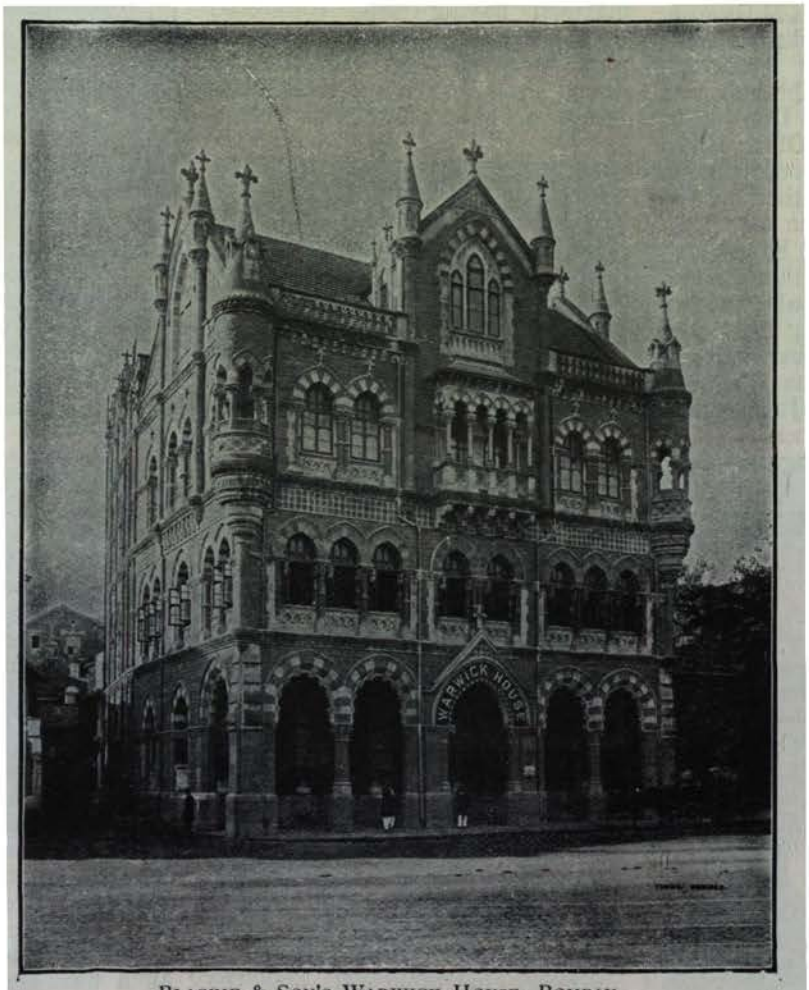
LALLA BISHAMBHAR NATH, Banker, Cawnpore, is a member of the firm of Lalla Ram Ratan Ramgopal, Bankers, and son of the late Lalla Baijnath, Government Treasurer. He was born in

Lalla BISHAMBHAR NATH.

1871 and educated at the Government High School, Cawnpore. After completing his educational course, he was admitted to his father's firm, of which he is still an active member. The firm are very well known in the provinces throughout Northern India where they do a very large banking business. Lalla Bishambhar Nath takes an active part in public affairs, having been elected a member of the Cawnpore Municipal Board. He is also an honorary magistrate, a member of the Executive Committee of the Dufferin Hospital, and Vice-President of the Committee of the Hindu Orphanage. As a business man he is a member of the Upper India Chamber of Commerce, and a man of note, both personally and through his influential firm. He is also a Darbari.

Messrs. BLACKIE & SON, Limited, Printers and Publishers. Head Offices: 17, Stanhope, Street, Glasgow, N. B.; Indian Office: Warwick House, Bombay. The firm of Messrs. Blackie & Son is among the most ancient and honour-

able publishing houses of the United Kingdom. It was founded in the year 1809 by Mr. John Blackie, who was born in 1782 and learned the business in the employment of Messrs. W. D. and A. Brownlie of Glasgow. On the retirement of Messrs. Brownlie, their business was offered to Mr. Blackie, who, for the purpose of constituting the firm under new auspices, went into partnership with two friends, Archibald Fullarton and William Sommerville, the new firm taking the style of Blackie, Fullarton & Co. Under this style the firm continued operations till the year 1831, when Mr. Fullarton retiring, Mr. Blackie's eldest son, John Blackie, Junr. (who subsequently obtained the honour of Lord Provost of Glasgow), attained a partnership, and the firm's style was altered to "Blackie & Son," which title it has retained ever since. The younger sons of Mr. Blackie, Senr., W. G., (the well-known Dr. Blackie), and Robert Blackie, were admitted partners at a later date. The present Managing Partners are J. Alexander Blackie and Walter W. Blackie, B.SC., sons of the late Dr. Blackie. From its earliest days the firm enjoyed an extensive connection with the best literati of the day. Moore's "Travels in Italy" was among the earliest publications undertaken by Messrs. Blackie, the writer, Dr. John Moore, being the friend of Burns, and father of Sir John Moore, the hero of Corunna. Adam's "Roman Antiquities" was another of these early publications of a striking kind, and from the presses of Messrs. Blackie also issued the "Glasgow Geography," edited with great erudition by James Bell of Campsie. As typical of the times and the country of publication, a leading place in the firm's publications was held by theological and religious works, books of reference, and others of a specially Scottish character. There was a strong connection between the house of Blackie and another eminent Scottish publisher, Robert Chambers, who edited the "Biographical Dictionary of Eminent Scotsmen" (1832-34). The famous "Land of Burns" was another publication due to the firm's enterprise. In this case, again, Robert Chambers co-operated with the firm, his pen being responsible for the descriptions of the scenes depicted by D. O. Hill. Chambers was also responsible for the editing of the whole work which contained the "Essay on the Life and Genius of Burns" by Christopher North, with which eccentric genius the firm had the usual trouble in the matter of obtaining and printing "copy." The poet Hogg was another author whose works the firm presented to the public in complete form. Ogilvies' "Imperial Dictionary," a work originally published in 1847 and, revised and augmented by Dr. Annandale, re-issued in 1902, is still a standard work of its kind; the "Imperial Gazetteer" edited by Dr. W. G. Blackie (1850); the complete "History of India, Civil, Military and Social, from the First Landing of the English to the Suppression of the Sepoy Revolt" (1862), are the other examples of the firm's contributions to English literature. From its earliest years the firm of Messrs. Blackie has associated itself with progress. In each succeeding epoch it has moved with the times and kept its publications abreast with current needs. The firm has been able to retain its foremost place by reason of the sound literary abilities, as well as business qualities of its members. Enterprise and foresight in literary matters has always distinguished the firm. Turning from the higher fields of literature to the needs of the younger members of society, we again find that in Reward books and Picture books of a nature suitable for children of all ages, sexes and creeds, Messrs. Blackie & Son stand unequalled. A glance through their catalogue brings back to memory many pleasant hours spent in poring over the fascinating pages written

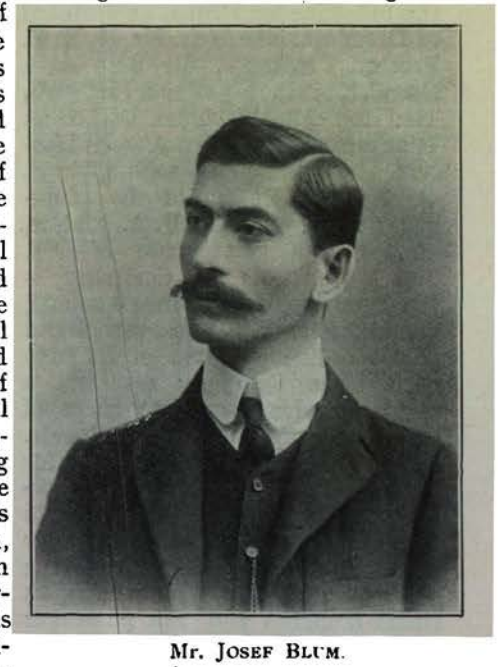


BLACKIE & SON'S WARWICK HOUSE, BOMBAY.

by Henty, Brereton, Strang, Fenn, Gordon Stables, Ballantyne, Frith, Everett-Green, George MacDonald and other well-known writers of Juvenile fiction, who were the delight of younger days. There can be no doubt that their success in this department is due to their keen interest in wholesome and healthy literature, as evinced by the excellence of their publications. While adding to general literature, Messrs. Blackie have paid special attention to educational matters, and their catalogue includes textbooks on the whole arcana of human knowledge. Their school publications include everything necessary for all students, from the infant class to the advanced collegian. There are available by the labours of the firm, Infant Primers, "Readers" of every description, Shakespeare Texts (five series, the "Warwick," the "Junior School," the "Picture," "Red Letter" and the "Plain Text"), English, Greek and Latin Classics, Teachers' Handbooks and educational works in French and German, Science, Mathematics, Philosophy, etc. The premises of the firm at Glasgow are hugely expanded from its early tenement. They now extend in three ranges of four-storeyed buildings, in addition to surrounding edifices of equal height. In these premises all the operations required for publication are carried on, Messrs. Blackie & Son undertaking every department of the business, and putting none out to contract as practised by other firms in the business. The main divisions of the business, Printing, Lithographing and Bookbinding are sub-divided into many sub-departments, but all co-ordinated into a highly efficient whole. In addition to the works at Glasgow there is also a large factory at Dublin, where stationery goods are manufactured. This is a very important factor in their Indian trade, their Indian Manuscript Books, Drawing Book and Science Note Books being used in all parts of India and the East. The Vere Foster Series of Drawing and Copy Books of world-wide reputation are also manufactured there. Of recent years the time-honoured firm was converted into a limited liability Company, but the Directors have abandoned none of the traditions of the old firm, and the stream of new publications bearing upon all subjects of interest, to meet the present requirements in Fiction, Technical, Educational or Scientific subjects, testifies to the energy and ability with which the business is governed. The firm have old-established branches in London and Dublin, and are also represented in the principal Colonies and Dependencies of Great Britain. The volume of Indian business which had been attracted by Messrs. Blackie's reputation necessitated the establishment of a branch in this country, and a house was, therefore, opened at Bombay in 1901 under the management of Mr. O. S Mawson, who for a number of years had been connected with the Educational side of Messrs. Blackie's business. Mr. Mawson resigned his position in 1907 and was succeeded by Mr. H. Morrod, who for some time had held the position of Assistant Manager. His experience and keen interest in matters educational and literary are well known in the North of England, and we have every confidence that the Bombay branch will flourish still more under his régime. The demand from India is largely for works of an educational nature, and is well served by the firm, which has a notable record in this line. Nothing being of greater importance here than the education on correct lines of the awakening Indian population, there is reason for congratulation that Messrs. Blackie have undertaken the task of supplying this Empire with works of the unimpeachable excellence they are accustomed to put forward.

Messrs. A. BLASCHECK & Co., Export and Import Merchants, established themselves in Bombay about 25 years ago, and have their offices in the Chartered Bank Buildings. The partners are: Messrs. L. A. Blascheck, J. Tintner (Europe), and H. Blascheck. The latter gentleman manages the Bombay Branch. The Head Office of the firm is at Frankfort-on Main, Germany. The Bombay firm have various sole agencies of European manufacturers. In the export line they deal principally in seeds and cotton, and for imports they deal in general merchandise. The firm is a member of the Chamber of Commerce, Bombay. Mr. Hans Blascheck, the partner who manages the Bombay Branch, came to India in 1895, first as an assistant, and in the year 1899 he became a partner. He then visited Germany, and came back to India in 1901 to take over the management of the Bombay branch of the business.

Mr. JOSEF BLUM, Merchant and Agent, 22-24, Medows Street, Fort, Bombay, was born in the year 1869 at Freiburg-i-Breisgan (Germany), and was educated in Germany. After completing his education he passed through his military training, and gained business knowledge and



Mr. JOSEF BLUM.

experience in Germany, and by travelling in various parts of Western Europe. In 1894 he proceeded to China, and established a branch factory of the Baden Clock Company, Limited, at Furtwangen (Black Forest). In 1897 he came to India to open business on his own account, and to represent the aforesaid Clock Factory and other German manufacturers commanding the German metal industries. He prospered in his attempts, and he has since been able to import directly all sorts of piece-goods, iron, metals and metal ware, etc., from the Continent of Europe, England, America and Japan, to such an extent, that in some lines of these imports he holds the reins of the Bombay market.

The BOMBAY STEAM NAVIGATION Co., Ld., Bombay, Registered Office, 72, Apollo Street, Fort, Bombay. Managing Agents—Messrs. Killick, Nixon & Co. This Company was originally started in the year 1865 by Mr. J. A. Shepherd. He was subsequently joined by Mr. Hajee Ismail Hassum, and they carried on the business jointly until the year 1900, when Mr. Shepherd retired. Mr. Hajee Ismail Hassum continued to carry on the business up to 30th June 1906, when it was formed into a Limited Liability Company, Messrs. Killick, Nixon & Co. being appointed as Managing Agents and the following gentlemen as a Board of Directors. The Hon. Mr. H. E. E. Procter, Chairmar, Sir Sassoon David, Kt., Mr. Hajee Ismail Hassum, The Hon. Mr. Vithaldas Damodher Thackersey, Mr. Hajee Ahmed Hassum, Mr. Lalbhai Dalpatbhai, Mr. P. D. Pattain, Dewan of the Bhavnagar State, and Mr. F. A. Reddie, of Messrs. Killick, Nixon & Co. The capital of the Company is Rs. 60,00,000, divided into 6,000 6% cumulative shares of Rs. 250 each and 18,000 ordinary shares of Rs. 250 each. The Company maintain a regular service over 1,200 miles of Coast, and employ over 3,000 hands. The Company own ten steamers for both passenger and cargo traffic, having an average gross tonnage of 1,156 tons each, and eighteen steamers for passengers only, having an average gross tonnage of 229 tons each, 14 steam launches and 144 passenger and jolly boats and lighters. All passenger and cargo steamers are fitted with electric light. The Company has through booking arrangements for goods with the Southern Mahratta and Bhavnagar-Gondal Junagadh-Porebunder Railways. Mr. William F. Hamilton, the General Manager, joined the Company in 1889. The Company carry over one and a half million passengers and 250,000 tons of goods every year.

The BOMBAY UNITED SPINNING AND WEAVING Company, Limited, was established in 1860. The Joint Stock Company was originally formed by Sir Mungaldas Nathoobhoy, a wealthy Bania merchant of Bombay. The original capital was Rs. 5,00,000 and the first Board of Directors comprised Sir Mungaldas Nathoobhoy, Messrs. Sapoorjee Dorabjee, W. H. Crawford, Cursondas Madhowdas, Bhicoo Sazba, and Dr. Bhaoo Daji. A year later it was found expedient to increase the capital to Rs. 7,50,000, and in the year 1863 it was still further augmented to nine lakhs of rupees. Under the original management the Company continued till the year 1874, when the present Agents, Messrs. Khatau Makanji & Co., took it over, and have carried it on ever since. The Mills then passed to the management of Mr. Seth Khatau Makanji and under his able rule, and after his death under that of his brother, Mr. Seth Jairaj Makanji, the affairs of the Company prospered. On the attainment of his majority Mr. Gordhandas, the eldest son of Seth Khatau, took over charge of the management from his uncle, Seth Jairaj, and commenced operations on a more vigorous scale than ever. He continued in the management till the year 1893, when, his multifarious duties pressing upon him, he made over charge of the entire management of the Company to his younger brother, Mr. Mulraj Khatau, who had received a University education. In 1901, an extraordinary general meeting of the shareholders of the Company passed a resolution reducing the capital of the Company from Rs. 9,00,000 to Rs. 2,25,000, but at a later meeting of the shareholders in the same year, this policy was reversed, and it was resolved to increase the capital to Rs. 11,25,000 by the issue of 3,600 new shares of Rs. 250 each. This resolution was confirmed at an extraordinary meeting of the shareholders held on 25th July 1901. At the same time the Agents volunteered to forego their commission on production in favour of a commission of ten per cent. on the profits earned by the Company. This action of the Agents gave a further impetus to the business of the Company which has continued in a most prosperous financial position ever since. The credit of these successful developments is largely due to Mr. Mulraj Khatau.

Messrs. BREUL & Co., Cotton Merchants; Head Office, Hornby Road, Bombay (established in the year 1865); branches at Amraoti, Khangam, Akola and Dhamangam. Secretaries and Managers for Breul's Cawnpore Cotton Pressing Company at Dhamangam, the Khangam Cotton Pressing Company at Khangam, the Hingoli Cotton Press Company at Akola; Members of The Bombay Chamber of Commerce, the Bombay Cotton Trade Association, and the Bombay Cotton Exchange. Partners, Augustus Breul and C. W. Breul; Assistants, A. W. Campbell and Sorabjee M. Nicholson signs per pro. The firm deals exclusively in cotton. It receives consignments from farmers and up-country dealers in all parts of India. It also imports American cotton, executing orders for future delivery in Bombay, Liverpool and New York. Mr. Augustus Breul, the senior partner in the firm, came to India in 1863, and in 1865 established himself in the Berars, which is noted as the foremost cotton-growing district in India. He was a pioneer in advancing the interest of exporters, by introducing direct dealings with planters, and by erecting cotton-pressing factories in the principal up-country cotton markets. He thus enabled Bombay exporters to procure not only the genuine growth from each district, but also to do so with greater expedition and at considerably reduced cost. In 1878 he opened his head office in Bombay and in 1907 took his nephew, Mr. C. W. Breul, into partnership.

Messrs. CHARLES BROWN & Co., Engineers, Boiler-makers, Iron and Brass Founders, Frere Road, Bombay. Founded 20 years ago through the enterprise of Mr. Charles Brown, this firm holds an important position in the ranks of local Engineers. Started in a small way, remarkable developments have succeeded each other rapidly and continuously, until at the present day the establishment is equipped with all the latest mechanical contrivances for the construction and repair of all sizes and types of steamers. The new works, which have just been erected on ground leased by the Port Trust for 50 years, are situated opposite the Prince's and Victoria Docks and the Merewether Dry Docks; the works are handy, and the resourcefulness and skill of the proprietors and their able assistants have helped to repair, effectively, many a vessel whose next trip was

looked upon as doubtful owing to extensive damages received in grounding or by collision which, it was feared, were next to impossible to repair. For instance, the S.S. *Cashmere* and the S.S. *Baron Innerdale*. This firm claim to be the largest contractors for steamship repairs in the Presidency. In this particular branch of the engineering business the most important point is the expedition with which contracts must be fulfilled. A disabled steamer in Dry Dock or lying alongside the Dock wall, must be got ready as soon as possible, to save loss to the owners and captains who, with the interest of their employers at heart, make agreements which mean working night and day for the Dock Iron Works. The firm never hesitates to sign a time-contract and, what is more, never fails to finish on due date. This facility is due in a large measure to the fact that over a thousand men are always on the attendance list, and with up-to-date apparatus and expert workmen they are able to accomplish what, to less well-managed and less conveniently situated works, would be almost impossible.

The Company are Agents for Suter, Hartmann and Rahtjens & Co.'s composition, which is almost exclusively used in the Navies of the world for painting men-of-war, and they hold the record for docking the largest steamer at the Merewether Dry Docks, Bombay—the S.S. *Armenian*, 8,825 tons. They docked her, cleaned and scraped her from loadline to hull, and painted same with two coats of Hartmann's Red Hand brand paint, carrying out all this work in the record time of 24 hours. The fixing of new propeller shafts, or refitting propellers to shafts, are tasks which the firm is frequently called upon to perform, and the shipping companies know that the work can be relied on. Messrs. Charles Brown & Co. have also in the course of their career been entrusted with repairs of the Japanese, Austrian, Portuguese, American and Persian men-of-war. They are licensees of the Merewether Dry Docks.

Mr. CHARLES BROWN, the head of the above-mentioned firm, who is a Member of the Institute of Naval Architects, was born in Argyleshire in 1856, and brought up, together with his brother, to the profession of Draughtsman and Naval Architect, at Dumbarton. He has travelled all over the world, and has not been without some sensational experiences. Perhaps the most thrilling of these was on the occasion when at the time of the McNeil incident in the Soudan, he was the only civilian present and was taken prisoner by a Lieutenant of the Scots Guards in the belief that he was a spy. Of course, immediately he was placed before Sir John McNeil, he was given his liberty.

Mr. Charles Brown may certainly claim the distinction of having introduced Association Football into Bombay. It was due to his enthusiasm that the Rovers' Football Club, whose annual tournament is the

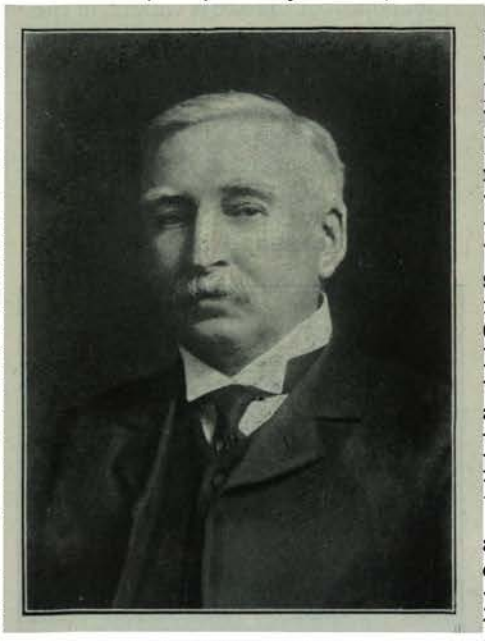
Mr. CHARLES BROWN.

best supported football fixture in India, was established, and he was the first player to kick off an Association football in Bombay. Full of energy, he played for six years in the team, was Captain, and occupied from time to time the positions of centre forward and centre half. The Rovers' Challenge Cup is now worth £100. Gold medals are presented to the winners and silver ones to the runners-up every year. Mr. Brown, who has been President of the Club, is life trustee of the Cup, and still takes a keen interest in the game.

Sir JAMES BUCKINGHAM, *Knight*, C.I.E. (*Colonel, Assam Valley Light Horse*). There are but few non-official Englishmen in the East who can look back on a residence of upward of forty years in India with as much honest pride as Sir James Buckingham who, for nearly four decades, has witnessed the growth of the Tea Industry in Assam from small beginnings to its present vast dimensions, and who, during his lengthy career, has enjoyed an unblemished record. Sir James Buckingham was born on the 23rd March 1843 at Doddiscombsleigh, South Devon, his father being the rector of that parish. Educated first at Blandford, and afterwards at Cheltenham, he came out by the old sea route, "round the Cape" in the "Nile" in 1864, and soon after his landing in Calcutta, proceeded to Assam, joining the Jorehat Tea Company, with which he served four years. In 1868 he took service with the East India Tea Company as Manager of Dufflating, but only stayed about a year with this company, leaving to join Messrs. Berners and Doyne, Barristers of Calcutta, in developing the estates of Amgoorie and Bosbain. At Amgoorie Sir Buckingham has been 34 years, successfully managing this valuable tea estate. Sir Buckingham married in 1880, Mrs. Laura Amelia Bainbridge, widow of Mr. F. Bainbridge, and daughter of Surgeon-Major Collins, I.M.S., and by her has two sons and a daughter, the latter having lately been married to Dr. Hunt, F.R.C.S., of the Nizam's State Railway. As a young man Sir Buckingham was a keen sportsman, and either over country or on the flat was a good performer in the pigskin. For some years he was the Honorary Secretary of the Jorehat Races. He was also an adept in the arts of fencing and boxing, as many who tried a bout or a round with him speedily discovered; and as President of the local Polo Club he received from the members a handsome silver bowl as a token of the esteem in which he was held. From the very first he was an enthusiastic Volunteer, and in 1884 he raised and commanded the Sibsagar Mounted Rifle Volunteers. In May 1890 was formed the Assam Valley Administrative Battalion, with Major Buckingham as Commandant. In the same year he

received the decoration of the C.I.E.; became Lieutenant-Colonel in 1891, Hon. A.-D.-C. to the Viceroy in 1895, retiring as full Colonel in 1897. As a member of the Volunteer Conference held in Calcutta during 1892, Colonel Buckingham did much to aid its deliberations, his experience in volunteering as connected with tea planters, being of very considerable practical use. Colonel Buckingham has had the rare honour of being twice appointed Additional Member of the Viceroy's Council; first in 1893-4, and again in 1901. He was specially selected to represent the Tea Industry in the Imperial Legislative Council when the Government of India decided to amend the Act of 1882, relating to labour on tea estates. His extensive knowledge and unrivalled experience of the circumstances and conditions of the emigrant labourers were willingly placed at the disposal of the Government, and he was conspicuously successful in representing the views of those engaged in the industry.

He was Chairman of the Assam Branch, Indian Tea Association, and Honorary Magistrate of the Sibsagar District for about fifteen years. As regards the former, the flourishing state of that branch of the Association is a further testimony to his fostering care and unremitting attention. In March 1902 Colonel Buckingham was the recipient of a richly-deserved honour at the hands of the General Committee of the Indian Tea Association, as in that month he was presented with a service of silver plate and a very handsome Chippendale clock, which had been subscribed for by them in recognition of Colonel Buckingham's great services rendered to the Tea Industry. On his retirement in April 1905, the Indian Tea Association and the proprietors and agents of tea gardens again showed their appreciation of Colonel Buckingham's strenuous efforts to protect the interests of the guild to which he had devoted so many years of his life, by entertaining him at a public dinner at the Saturday Club, Calcutta, and by the presentation to him of a purse of gold, amounting to £1,100. It would be a well-nigh impossible task to place on record the many and valuable services Colonel Buckingham rendered to the industry during his long and honourable connection with it; and his strong determination to put up with no injustice to the cause he advocated made him invaluable to the great Tea Industry of India in general, and of Assam in particular. On the 27th June 1906 Sir James



Sir JAMES BUCKINGHAM.

was appointed Secretary to the Indian Tea Association (London); Office: 5, Fenchurch Street, London. He received the honour of knighthood in 1906.

The CENTRAL INDIA SPINNING, WEAVING AND MANUFACTURING Company, Ld., Bombay. This Company was formed and registered in Bombay in 1874, with a Capital of Rs. 15,00,000, divided into 3,000 shares of Rs. 500 each, and is worked by the Agency of Messrs. Tata and Sons.

Its Factory is situated in Nagpur, Central Provinces, and is called the "Empress Mills." The Mills started working in 1877, when they were equipped with 15,552 throstle and 14,400 mule spindles and 450 looms, all driven by a pair of compound engines, capable of developing 800 I. H. P.

The success which has attended the working of the Company is unique in the annals of the Indian Cotton Industry. The Company has, out of its profits, added Rs. 31,87,500 to its Capital, giving fully-paid up shares free to the shareholders, in proportion to their original holdings; and thus raising the Capital from Rs. 15,00,000 to Rs. 46,87,500.

It has paid Rs. 1,33,29,381 in dividends; has Rs. 1,72,042 as Reserve Fund, Rs. 20,98,611 as Depreciation Fund, Rs. 8,58,330 as Insurance Fund, Rs. 1,56,813 as Workmen's Pension Fund, and Rs. 35,352 as Provident Fund, bringing the total sum of Funds to Rs. 33,21,148. Thus the total profits made up to 30th June last amount to Rs. 1,98,38,029; or more than thirteen times the original capital. The original shareholder has consequently gained, by being the first fortunate allottee of a share in this Company, 2·05 shares free; and his first investment of Rs. 500 is thus, with these 2·05 bonus shares added, worth to him Rs. 4,773 at the present rate of Rs. 1,565, and has brought to him besides Rs. 4,443 in the shape of dividends.

The Company intends to build up a large Reserve Fund with the object of being able to pay, for one year at least, a dividend equal to the average of ordinary years, in the contingency of a fire causing stoppage to the working of such a large profit-earning concern as this.

It has adopted the principle of setting aside adequate sums for depreciation of property; and though nearly the whole of the machinery has been renewed—the best and newest of its kind, with all the latest improvements, having recently been set up, and the buildings kept in thorough good repair, so as to be as new to-day as they were twenty-seven years ago—the Depreciation Fund still stands at a respectable figure, as given above.

The property of the Company being extensive, the annual premium of Insurance comes to a very large sum, and the Company contents itself with partly insuring it with the Insurance Offices and carrying the remainder of the premium to the credit of its own Insurance Fund, so constituting itself to some extent, its own underwriter. It has been most careful in taking every possible precaution against fire risks; having provided automatic sprinkler installations all over the mills, and all other appliances for putting

out fires, as experience, as well as the Fire Insurance Offices, have, from time to time, suggested. The Company is rightly mindful who help to bring in the "grist," and is building up a Workmen's Pension Fund so that it may be able to pay its operatives, in their old age, a small pension, if they have rendered service during a long period of their life. It has also introduced a system of Provident Fund, to which officers and employés of the Company can, at their option, contribute a certain percentage of their income, the Company paying interest on same and contributing also such sums as it may think fit from time to time.

The Company possesses 88 acres of landed property in Nagpur and elsewhere. It has mill buildings, godowns, offices, officers and apprentices' quarters, recreation rooms, bleach and dyehouses, and ginning factory covering an area of 6,74,459 square feet in Nagpur alone. It has, besides, half a dozen cotton ginning factories, together with cotton baling presses, with land and buildings and godowns appertaining to them, in the cotton districts. The total value of the immovable property is Rs. 17,96,072. Its plant now consists of 74,924 ring spindles and 1,384 looms, together with the necessary preparatory machinery, all driven by three pairs of compound engines developing 2,400 I. H. P. and one set of triple expansion engines, developing 375 I. H. P. There are 12 Lancashire Boilers, 8 feet by 30 feet each, of the latest type, with a working pressure of 160 lbs. per square inch, supplying steam to these engines. Besides the above engines and boilers, there are several others of smaller type for supplying steam and driving machines for finishing, bleaching, and dyeing purposes. The total value of the movable property is Rs. 44,86,849. The engines, boilers and gearing are all made by Messrs. Hick, Hargreaves & Co., of Bolton; the blow room machinery by Messrs. Lord Brothers, of Todmorden; the cards by Mr. Elijah Ashworth of Manchester; the frames by Messrs. Platt Bros., of Oldham, the ring frames by Messrs. Brook and Doxey, of Manchester, and Messrs. Platt Bros., and the weaving machinery, partly by Messrs. Platt Bros., and partly by Messrs. Henry Livesey & Co., of Blackburn.

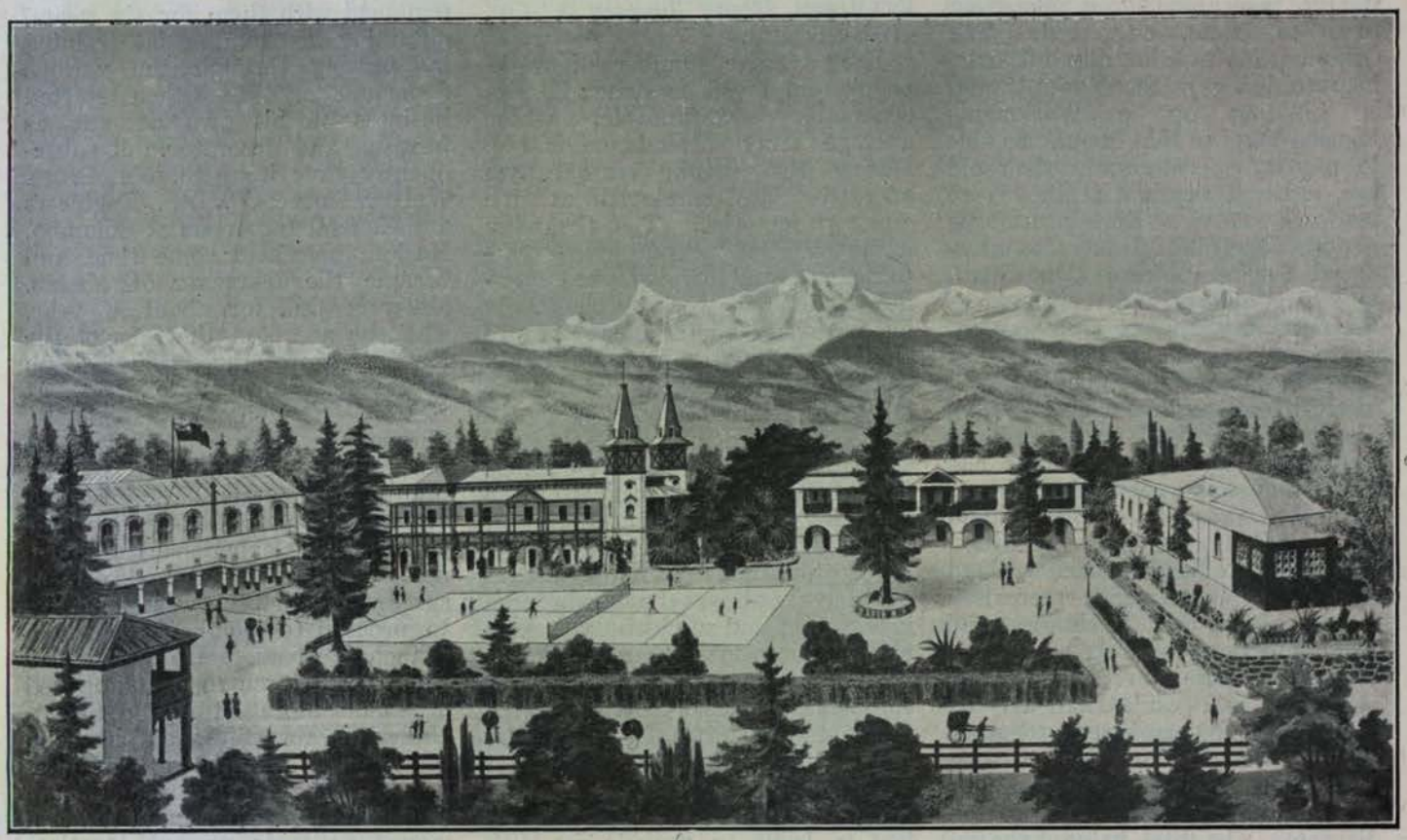
The average number of workpeople employed is 4,300; besides contractors' workpeople, whose average daily attendance is 150. During the cotton season, 430 operatives are employed at the ginning factories. The Company has 6 agencies for purchasing cotton alone, and employs 120 operatives for this work specially. It has 28 agencies in different parts of India for selling its yarn and cloth.

The average dividend paid on the increased capital during the last 18 years has amounted to 19·50 per cent. per annum, which would be equal to 43·92 per cent. on the originally subscribed capital.

The Company was the pioneer of the Cotton Industry in the Central Provinces. It was the first in India in adopting and successfully demonstrating the value of the ring spindle, at a time when even the English spinners looked askance and doubted the vast superiority of ring spindles over throstle spindles, and, for such counts as India spins, over even mule spindles. It was also the first in India to provide its Mills with sprinklers for automatically extinguishing fires. So has it been first in India in adopting in its Mills the humidifying and ventilating apparatus of the best kind available. It is the only one, so far as is known, having a regular pension and provident fund scheme for its operatives. Mr. D. J. Tata is the Managing Director and is to be congratulated on the successful results of his business capacity and energy.

Mr. ERNEST AUGUSTUS JOHN CHAPMAN, Manager of Messrs. Thompson & Thomas & Co. (known as the Australian Stores), Bombay Branch, was born at Oxford Terrace in London in 1870, and received his education at the Willesden International College. While still in his teens he joined his father on the Stock Exchange, London. In 1889 he went to Sierra Leone, on the West Coast of Africa, as an assistant in the trading depôt of the Royal Niger Company, but after six months' service, owing to frequent attacks of yellow fever, was obliged to return home. He next joined the firm of Messrs. Shoolbred & Co., London, and remained with them for six years, obtaining his commercial training by passing through the various departments. He then started business on his own account as furnisher and decorator, but subsequently gave it up to join Messrs. Walker, Sons & Co., Ltd., Engineers and General Importers at Colombo. He left them after some time and became the Manager of Messrs. Miller & Co., for about a year, when he accepted the offer of the Managership of the retail Branch of Messrs. Brown & Co., Ltd., at Hatton, Ceylon. In 1888 Mr. Chapman was appointed for the purpose of opening out a retail branch of Messrs. Thompson & Thomas & Co. at Colombo, which, with his wide experience and business abilities, he carried out so successfully that he was requested to proceed to Bombay to open a branch business. He arrived in Bombay in March 1900, and opened a small store in Apollo Street. Under his able direction, he soon established a growing business which demanded larger and more commodious premises, and the firm moved to their present location, Hornby Road, in August 1904. Here the business has nearly doubled in volume, which speaks largely in favour of Mr. Chapman, who, as Manager, has devoted his energy and zeal to the interests of the Company. The latter are direct importers of all classes of provisions from Australia, America and the Continent, and have branches at Colombo and Singapore, with their Head Office in Melbourne, Australia.

CHARLEVILLE HOTEL, Happy Valley, Mussoorie, the leading Hotel in this charming hill station. The popularity of Mussoorie as a hill resort is so well known that it is not surprising that this sanatarium should possess in the Charleville Hotel the largest establishment of its kind outside of Bombay, the gateway of India, where huge hotel accommodation is a necessity. The Charleville Hotel is beautifully situated in the west end of Mussoorie, overlooking the Happy Valley and facing the snows, in its own large grounds, including an orchard and kitchen-garden where all the fruit and vege-



CHARLEVILLE HOTEL, MUSSOORIE.

ROYAL HOTEL, LUCKNOW.

tables required for the table are grown. The grounds, which extend to 23 acres, also comprise cow-houses, piggery, poultry farm and an up-to-date dairy, the whole forming a valuable freehold property. The Hotel itself contains over 200 rooms in which are included drawing rooms, ball room, billiard room, smoking, card and reading rooms. A post and telegraph office is attached to the prèmises. The excellence of the Charleville Hotel is emphasized by Royal favour, this being the only hotel in India which Her Royal Highness the Princess of Wales honoured by staying at during her Indian tour in 1906. The original building of the Hotel dates back to 1842; in the year 1857 the building was utilized as a Girls' School, and it was not till 1873 that the hotel business was started on the premises by Mr. Hobson, Manager of the Mussoorie Bank at that time, and proprietor of the Happy Valley Estate. The business was continued under this proprietorship until the year 1881 when the Mussoorie Bank acquired it and carried on the affairs of the Hotel for a couple of years. In 1884 the Bank leased out the business to two business men of Mussoorie, who conducted it with the aid of Mr. Henry Wutzler as Manager with one-third interest in the concern. After two years Mr. Wutzler purchased the Hotel and good-will from the Bank as a going concern. Under Mr. Wutzler's propietorship the premises have been much increased in size, and the business has been so built up by able management till now, as previously said, it is the largest hotel establishment, outside of Bombay, in British India.

The CRITERION RESTAURANT, Mussoorie. This establishment, also the property of Mr. H. Wutzler, is centrally situated in the town of Mussoorie opposite the Band Stand and Public Library. Mr. Wutzler acquired the Restaurant in the year 1885, and carried it on for ten years till 1895 when he rebuilt it in its present form. Its convenient situation renders it a favourite resort with the inhabitants and visitors of Mussoorie for refreshments, dinner parties, dances, for all of which it has excellent accommodation. Its proximity to the band stand increases the attractions of the admirable quality of the entertainment provided. The Restaurant is a fine substantial two-storied building.

Mr. HENRY WUTZLER, Proprietor, Charleville Hotel, Mussoorie, was born in Saxony, Germany, in the year 1853, and educated at Leipsic. He has had a world-wide experience of hotel business, and during his time in India has catered for the most distinguished guests. No fewer than eight Viceroys have testified to his skill, and among the Commanders-in-Chief for whom he has catered are Lord Roberts, Sir George White, Sir W. Lockhart, Sir P. Palmer and Lord Kitchener.

Mr. HENRY WUTZLER.

He catered for the Tsar of Russia when he toured India (prior to his coming to the throne), and among other Royal personages for whom Mr. Wutzler has catered are His Imperial and Royal Highness Franz Ferdinand, future Emperor of Austria, the late Prince Albert Victor of England, and H. R. H. the Duke of Connaught, from whom he received a decoration. He was also in charge of the principal catering for the tour of T. R. H. the Prince and Princess of Wales during their recent visit to India, which contract was extended over the whole of the tour lasting four months; and for his services he received the Royal Warrant of Appointment as Caterer to T. R. H. Mr. Wutzler was a member of the Board of Commissioners for Mussoorie for twelve years, and retired from this public service in 1903. He is one of the oldest members of the Foreign Society for Hotel-keepers.

WUTZLER'S ROYAL HOTEL, Lucknow. In addition to his Mussoorie enterprise,—the "Charleville Hotel," Mr. Wutzler in 1899 purchased the old original building at Lucknow, which he has now converted into the fine modern hotel bearing the above name. There remains but little now of the original building. Mr. Wutzler, on acquiring the property, pulled down most of it, and reconstructed the whole in the most approved up-to-date fashion, adding very considerably to the size of the establishment. Fire-proof bricks and iron enter largely into the construction of the new buildings. There are about eighty rooms in the Hotel, with six State rooms, dining, drawing and billiard rooms and reception-room. The premises are surrounded by large and beautiful garden grounds. There are numerous stables and coach houses attached. The Hotel with its grounds is one of the beauty spots of the North-West. The enterprising proprietor intends introducing electric lighting throughout the hotel buildings. The grounds contain lawn tennis courts, and carriages of all kinds are kept on the premises. The cooking ranges and general culinary arrangements are maintained on a modern scale in the French style. The Hotel is open for the cold season from 1st October to 31st March under Mr. Wutzler's personal supervision. The proprietor spares no pains to add to its conveniences with constant improvements.

Mr. Wutzler has recently formed his two Hotels and the Criterion Restaurant into a Limited Liability Company, with a capital of nine lakhs of rupees, and, judging from the successful financial working of the last 24 years, the shares should be a valuable and desirable investment.

Mr. DOORGA CHURN CHUNDER, the senior partner of the firm of Messrs. Herbert and Chunder, is

the youngest son of the late Babu Mohendro Lall Chunder, and a descendant of the well-known Dalal family of Chuckerbere, near Calcutta, where he was born in the month of October, 1870. The Dalal

Mr. D. C. CHUNDER.

family claim great antiquity and a high social status. Doorga Churn Chunder lost his father when he was only one year old, and when he had finished his education he served his period of probation in the service of a local jute mill. At the close of 1894 he entered the service of several tea companies, notable amongst which was the Holta Tea Company, Ld., whose then Manager, Mr. Herbert Compton, instructed him in the details of the cultivation and manufacture of tea. In 1895 he succeeded to the firm of Dawson and Co., and became its sole proprietor till 1905. The firm having suffered heavily in 1898, owing to the advent of plague which, by dislocation of labour, upset many trading establishments in Calcutta, Mr. Chunder started a colour printing business, which he afterwards amalgamated with that of Mr. Thos. Herbert, the style of the firm being now known as Herbert and Chunder.

This firm quickly made its mark by turning out really high-class productions, and securing a large share in the lithographic trade of Bengal, and in consequence of the untiring energy, industry and perseverance of Mr. Chunder, it now occupies a high position amongst cognate establishments, and is replete with the most up-to-date appliances, the machinery being worked by electricity.

Mr. Chunder is also the sole proprietor of the firm of Doorga and Co., which has considerable dealings in imports and exports. He is also agent for several tea plantations, etc., etc.

Messrs. L. B. COATES & Co., Merchants and Government Contractors, 103, Hornby Road, Fort, Bombay. Established in January 1906. Partners, H. O. Coates and Luxmidas Dwarkadas Barbhaya.

Mr. H. O. COATES.

The firm deal principally in Manchester goods, but also do a large import and export trade with the Continent. They supply the Army and Government Departments with a fast-dyed khaki drill, of which they have the sole monopoly in India, and also cater for all Regimental and Departmental requirements. Their Colombo Agents are J. Whitehead & Co.; in London they are represented by Musgrave & Co., David Midgley & Sons, Manchester and Bradford; Ledward and Taylor, Manchester; Samuel Ogden & Co., Manchester; Karl Festin, Esq., Hamburg; Klatzer & Co., Amsterdam. The firm are Sole Agents for the Stolzenberg Patent File Co. and the Pantelegraphy Publishing Co., Ld., of London, who have taken over from them the publishing rights of the complete 12 Figure Code compiled by them, for which they have obtained copyrights.

Mr. HAROLD OLIPHANT COATES (*Captain, Bombay Volunter Artillery*) was born in 1871 at Timperley, near Manchester, and educated at the Manchester Commercial School. He came to Bombay in 1892 for an old established firm. In January 1906, in conjunction with Mr. L. D. Barbhaya, a well-known native gentleman of Bombay, started the firm of L. B. Coates & Co., Merchants and Government Contractors.

Mr. Coates is well known in Bombay Masonic Circles and now holds the post of D. G. Treasurer. He is also a keen Volunteer and holds the rank of Captain in the Bombay Volunteer Artillery.

Mr. LUXMIDAS DWARKADAS BARBHAYA, Partner in L. B. Coates & Co., was born in 1869, and is descended from the well-known and respected Banias—the Barbhaya family. He is of the Kapole Bania

Mr. LUXIMDAS DWARKADAS BARBHAYA.

caste, a very prominent and leading community among the Banias in Bombay, originally inhabiting the Kathiawar District. His forefather

was the second Bania who was personally honoured by the Governor of Bombay in the régime of the East India Company. The surname, Barbhaya, means twelve brothers, who had all joined together in one trade. He received his education at the Chandanwady High School as far as the 4th Standard, and then joined the Elphinstone High School where he matriculated, and afterwards attended the Elphinstone College for the previous examination for a year only, when he had to leave it to enter business. He was, from 1887, in the Insurance business for nearly 17 years, where he secured varied experience in the Insurance line and had twice the sole management of six or seven Insurance Companies. Early in 1905, he came in contact with Mr. H. O. Coates and started a joint business under the style of L. B. Coates & Co.

The COMMERCIAL BANK OF INDIA, Limited, established its Lahore branch in 1897, its head office being in London. Capital, Rs. 23,90,550, and Reserve,

Mr. H. E. Day.

Rs. 1,00,000. The business of the Bank is conducted on ordinary banking principles, and the range of its influence may principally be defined as between Karachi and London.

Mr. Harry Edward Day, Agent of the Lahore Branch, was born in London in 1879 and received his education privately at Bedford. After completing his education he entered one of the largest firms of chartered accountants in London, and for three years received his practical training in accounts. In 1899 he joined the Commercial Bank of India, Limited, as an assistant at the head office, London, and in 1900 he was transferred to India, under Mr. R. Murray at the Calcutta Office.

He was next posted to the Karachi Branch, in the capacity of Accountant, where he remained for about three years. In 1906, he was appointed as Agent to the Lahore Branch and took charge in the same year.

COMPTOIR NATIONAL D'ESCOMPTE DE PARIS (French Bank). Head Office :—14, Rue Bergere, Paris ; Bombay Office, Esplanade Road. Established in India in the year 1866 ; Manager, Mr. L. Combe. Branches in all principal towns in France, Tunis, New Orleans, Melbourne, Sydney, all principal towns in Madagascar. London Office :—52, Threadneedle Street, E.C., London. Bankers, Bank of England. Capital, £6,000,000. The Bank does all ordinary business in Banking. Drafts and letters of credit are issued payable at all chief commercial towns of the world. Travellers' attention is especially drawn to its Letters of Credit Department in Paris, at the Branch Office, 2, Place de l'Opera, in the very centre of the fashionable quarter of Paris, on the Boulevards, facing the Grand Opera, and within easy reach of the principal hotels, theatres, and shops. Writing, reading rooms, telephone, all necessary arrangements for receiving and despatching correspondence, exchanging money, letting safes, or parts thereof, wherein travellers can deposit valuables they do not wish to keep in hotels, strong rooms for the storage of heavy luggage, etc., are provided. The Bank is a member of the Chamber of Commerce, Bombay.

Mr. LUCIEN COMBE, Agent, Comptoir National d'Escompte de Paris, Bombay Branch, was born in Paris in 1873. He was educated also in the same city. After completing his education he joined the French Bank in the year 1888, at the Head Office in Paris. He served the same Bank in London in the year 1890, in New Orleans in the year 1896, and in Calcutta in the year 1900. After this thorough experience in Banking he

Mr. L. Combe.

was sent to Bombay in 1903 as Acting Manager, and in the year 1906, on the 1st of January, he was appointed Agent of the Bombay branch. He represents the Bank in the Chamber of Commerce, Bombay.

Messrs. CORY BROTHERS & Co., Ld., one of the largest firms of Colliery Proprietors and Coal Merchants in the world, have their Head Offices at Bute Docks, Cardiff, and 3, Fenchurch Avenue, London. They have coaling stations at all the principal ports of the world. Their Indian Office is situated at the Royal Insurance Buildings, 10, Church Gate Street, Fort, Bombay. They are also Agents for the Burrakur Coal Company, Limited, of Calcutta, and Managing Agents for Shivrajpur Syndicate, Limited. Their cable address at all ports is "Cory." The Indian Depôt was established in 1899, for the sale of Cory's Merthyr and Cory's Aberdare Merthyr Welsh coal, and for the purpose of carrying out bunkering contracts. The Agency for the Burrakur Coal Company was added

in the year 1901, and the firm became Managing Agents for the Shivrajpur Syndicate, Limited, in the year 1905. The latter Company was formed for the purpose of working Manganese Ore, etc., in the Panch Mahals. The Indian Depôt imports annually from 15 to 20 thousand tons of Welsh coal, and about 100,000 tons of Bengal coal, and bunkers between 30 to 50 thousand tons. The principal Steamer Lines supplied in Bombay are the Messageries Maritimes, German East Africa Line, Florio Rubattino, etc. To meet this volume of trade the most perfect organization is needed, and the firm in its various branches and

Mr. F. A H. East.

agencies exhibits a systematic co-ordination which enables it to run its business with smoothness and regularity. Nothing connected with shipping or coaling comes amiss to this firm, which maintains a large and competent European staff to look after its interests. The Manager of the Depôt at Bombay, Mr. F. A. H. East, has been connected with the Bombay House practically since its inception, prior to which he had held positions of responsibility with the Sulphide Corporation, Limited, of Newcastle, New South Wales, and the Vacuum Oil Company in London.

Messrs. COUTTS & Co., Army, Shipping, Forwarding and Passenger Agents, Bombay and Karachi.

An extensive business has been built up within the last twelve years by the enterprise of the above well-known firm. It was in 1894 that Mr. Ernest Hadrian Coutts laid the foundation of this extensive organization and its many ramifications, commencing business on a comparatively small scale.

The Chief Offices in Bombay at 59, Hornby Row, occupy a prominent position in the street which is the business centre of the City, and contain in addition to the usual general offices and private rooms of the firm, a packing and despatch department, forwarding department, shipping department and passenger department, with spacious and dry warehouses for storing passengers' baggage at Frere Road, Mody Bay.

The whole establishment is admirably ordered and systematised, and presents at all times a scene of busy animation. The scope of the Company's operations embraces all business connected with the shipping of goods in large quantities, the forwarding of parcels and packages or baggage to any part of the world by their well-known "Oriental Parcels" and "British and Foreign" expresses. In this connection they have also organized a special service for the Military, particularly well and favourably known as the "Soldiers Express," by which they convey boxes, heavy and surplus baggage, to any address in England, delivered at the door of the addressee, at very low charges, combined with despatch. The firm has by reason of this specially organized service been placed in a very prominent position with the military service in India. The special feature of the firm of Messrs. Coutts & Co., is that they give the benefit of all their above Express Services to the sender of parcels, etc., as they convey the same at the least cost, either by weight or measurement, whichever is the more beneficial to the sender; and it is generally questioned how this firm can afford to offer these facilities, when similar houses apply the most profitable rate to themselves. Messrs. Coutts & Co. are in a position to answer this question, which they will be pleased to do at any time.

As Passenger Agents, Messrs. Coutts & Co. afford every assistance in booking passages, selecting desirable berths, collecting baggage and placing it on steamers. They also store baggage, at a shilling per month per package.

Letters, telegrams and parcels are received to await arrival of friends, for which no charge is made. They effect insurances, Life, Marine, and Fire, at lowest rates obtainable, and will collect amount of invoices against delivery of goods entrusted to their care.

As Clearing and Custom House Agents, they clear consignments from abroad through the Customs, and forward to any address. They enter into contracts with houses making various shipments by a single vessel, to receive and distribute the packages to various addressees, and in this connection it is worthy of mention that houses who are in the habit of making shipment of single packages and paying minimum steamer freight, should enter into correspondence with Messrs. Coutts & Co., who will be glad to advise them as to the means whereby these minimum freight charges may be saved. Their annual transactions amount to over 10,000 packages exported per annum and approximately double that number imported; and these shipments include every conceivable variety of goods.

The firm of Messrs. Coutts & Co. hold a very high reputation in the commercial world, and are well known in every part of the globe, as the result of twelve years of hard work, during which period they have never failed to carry out, in a satisfactory manner, any matter they have undertaken. They have lately opened a branch house at Karachi by special request of their various clients, which is under the able direction of Mr. R. Clarence Miles, one of the partners in the Karachi branch of the firm.

Mr. E. Hadrian Coutts, chief partner in the firm, is a gentleman of wide and varied experience, and necessarily of great administrative powers. He is a keen Freemason, and much esteemed in connection with Lodge Perseverance, and Chapter Perseverance, in which he holds offices.

Messrs. Coutts & Co. have reliable agents and correspondents through-

out the world. Their Chief Agents are Messrs. Sutton & Co., Carriers and Shipping Agents to H. M. the late Queen, of Golden Lane, London, who have over 600 offices throughout Great Britain; the Export Shipping Co., New York; and Mon. Geo. Gianola, late Henri Pinatel, Marseilles.

Messrs. Coutts & Co. also represent the following well known firms of Shipping Agents of old standing repute: Messrs. Pitt & Scott, Ltd., of London, Liverpool and New York; Messrs. Wingate and Johnstone, of London, Liverpool, Glasgow, Manchester and Southampton; Messrs. Carter, Paterson & Co., Ltd.; Messrs. The European General Express of London; The Raymond and Whitcomb Co.'s Tour of Boston, Chicago, Philadelphia and New York; Messrs. Alfred H. Post & Co., London and New York, and many other Continental firms too numerous to mention.

As authorized baggage agents for H. M. Transports, they are represented in London, Southampton and Portsmouth by Messrs. Dawson Brothers and Messrs. Arthur Henniker & Co., Shipping Agents. They enjoy the patronage of the D. A. A. G., Brigade Office, Bombay Command, and of the officers, N. C. O.'s and men of almost all British regiments in India.

Mr. JOSEPH COUTTS, Chief Accountant and Deputy Secretary of the Bank of Bengal, born in the year 1858 in Scotland, and educated in the same country. He commenced his Banking career in one of the Glasgow Branches in the Royal Bank of Scotland in 1875. After five years' service in that Bank at several of its Branches, he obtained an appointment in the Bank of Bengal at Calcutta which he joined in 1880. After serving two years in Calcutta, he was appointed Assistant Accountant at the Rangoon Branch, and from thence to the up-country Branches at several of which he was agent.

In 1892, he returned to Burma, and for a number of years was Agent of the Bank of Akyab and latterly at Moulmein; he also acted as Agent of the Bank at Rangoon. In 1906, he was transferred at Calcutta and appointed by the Directors, Chief Accountant and Deputy Secretary of the Bank.

Mr. J. COUTTS.

Messrs. COX & Co., Bankers and Agents, Hornby Road, Bombay, commenced business in London, May 1758, when Mr. Cox, who had been for some time Secretary to Lord Ligonier (at that time Field Marshal, Commander-in-Chief, and Master General of the Ordnance) was appointed by Lord Ligonier, Agent to the 1st Regiment of Foot Guards. Mr. Cox carried on his business in Albemarle Street, London, alone until the year 1765. In January 1765 Mr. Cox entered into partnership with Mr. Henry Drummond, and they commenced their joint business in Craig's Court, Charing Cross; by this time they held the agencies for ten regiments. In July 1772 Mr. Mair succeeded Mr. Drummond in the partnership, the firm being from that time Cox & Mair.

In 1775 Cox & Mair were agents to twenty-four regiments; in 1776 to thirty regiments; in 1778 to thirty-five regiments.

In June 1779 Mr. Bethell Cox, an only son, was brought into partnership and the firm became *Cox, Mair & Cox.* In 1783 Mr. Mair died and was succeeded in the partnership by Mr. Greenwood, the firm then becoming *Cox, Cox & Greenwood.*

In July 1790 Mr. Bethell Cox retired from the partnership, and the firm became *Cox & Greenwood.*

The commencement of the war with France in 1793 brought an immense accession of business, and in July 1797 Messrs. Meyricks having voluntarily relinquished the Paymastership of the Artillery (on account of the trouble attending it), the Marquis Cornwallis gave the appointment to Messrs. Cox & Greenwood.

In 1795 Mr. Richard Henry Cox (grandson of Mr. Cox) was taken into the office, and became a partner in Christmas, 1800, the firm being then styled Cox, Greenwood & Cox.

Mr. Charles Hammersley, nephew to Mr. Greenwood, came into the office in November 1800. At this time the house were Agents to the Artillery, fourteen regiments of Cavalry, sixty-four battalions of regular Infantry, fourteen unnumbered regiments and seventeen regiments of Militia.

Mr. Cox, the head and founder of the house, died in the month of August 1803, at the age of 86, and the firm then became *Greenwood & Cox.*

The business continued rapidly to increase. By the failure of Ross and Ogilvie in April 1804, the Third Foot Guards and seven regiments of the Line were brought to Craig's Court, and Mr. Meyrick's retirement in December 1805 brought a further increase of seven regiments. In December 1806 Mr. C. Hammersley being taken into partnership, the firm became Greenwood, Cox & Co.

In January 1806 the Corps in the Agency of the house were the following, *viz.*:—The Artillery, Engineers, Cavalry, nineteen regiments of Wagon Train, one hundred and sixty-three battalions of Infantry and twenty-one regiments of Militia.

Mr. Henry Richard Cox became a partner in December 1828; in 1830 the bankruptcy of MacDonald & Campbell brought an accession of business to the extent of seven regiments of Infantry, and one of Cavalry.

On the 25th January 1832 Mr. Greenwood died in his eighty-fourth year, having been forty-nine years a partner and twenty-nine years the head of the house.

In 1833 the military year was altered, to commence on the 1st of April. The object of the alteration was to give time, after the meeting of Parliament, for voting the supplies of the ensuing year before any issue took place. In the spring of the same year, a Committee of the House of Commons on Army and Navy expenditure recommended the substitution of pensions for sinecures under Government, and some changes in the emoluments of Colonels of regiments, the object of which was to abolish non-effectives, and simplify accounts. The only considerable reductions were in the emoluments of the Colonels of the Foot Guards (from which reduction the Duke of Wellington was specially exempted in consideration of his great services,) and in those of regiments of Cavalry in India, which were deprived of the extra allowance for wear and tear of appointments in a tropical climate. On the 1st April 1834, the name of Greenwood was dropped and the firm became *Cox & Co.*

Mr. Frederick W. Cox commenced his career in Craig's Court in January 1829, and in December 1839 Charles Hammersley, Junior, and Hugh Hammersley were received into the office.

In 1854 the war with Russia occasioned an augmentation to the army of upwards of forty thousand men, and on the embodiment of all the Militia,—English, Scotch and Irish, Messrs. Cox & Co. obtained without solicitation the agency of seventy regiments.

The termination of the war brought back the army to a peace establishment; the Cavalry and Infantry were reduced to nearly the same number as before the war, but the Artillery was fixed at an establishment of about twenty thousand men, being three times the amount of the old peace establishment.

In 1857 an expedition to China was prepared under the Earl of Elgin, consisting of about 4,000 troops in addition to a strong sea force. Part of this force was intercepted for the more urgent service of India, and between thirty and forty thousand men were sent off from England and the Colonies in the course of the months of July, August and September, to assist in suppressing the Mutiny; Sir Colin Campbell being appointed Commander-in-Chief in India, in the place of General Anson, who died at Meerut immediately after the first outbreak in the North-Western Provinces.

Cox & Co.'s Building, Bombay.

During the succeeding years, the business of the house continued to expand steadily until the old premises became too small, and in 1887 the firm moved into the new Bank built partly on the site of several houses fronting on Charing Cross, which had been previously bought as opportunity offered, and partly on a portion of the Craig's Court building.

Again, in 1900 the war with South Africa brought to the house an enormous accession of business, and arrangements had to be made, and were successfully made, to carry out the financial business of officers actually in the field, the work of delivering to them their letters alone, whilst moving on the line of march, entailing a large addition to the establishment of the Postal Department of the firm in London.

The house had for a long time been considering the opening of branches in India, and in 1905 the first Indian branch was opened in Bombay, followed by another one at Rawal Pindi, in 1906.

Mr. FRANCIS ROWLEY HILL, Manager of Messrs. Cox & Co., Bankers, Bombay, was born in England in the year 1872, and educated at Marlborough College, England. After finishing his education he joined the Bank of Scotland at Kelso in the year 1890. Mr. Hill was transferred to the Head Office of the Bank of Scotland at Edinburgh in the year 1893. He then accepted a post in the Bank of Bombay and came to India in the year 1894. He worked with the Bank with success for nine years and managed its four different branches, including the one at Karachi. His abilities were well appreciated by Messrs. Cox & Co., of London, who offered him the post of Manager of their branch in Bombay.

This responsible post was accepted by Mr. Hill in the year 1905, and he opened in Bombay Messrs. Cox's first branch in India. Mr. Hill represents the Bank in the Chamber of Commerce. He has a great taste for different sports wherein he

takes lively interest. He is also a Sergeant in the Bombay Light Horse, and devotes his energies

Mr. F. R. HILL.

and time to maintain and raise the high standard of the Corps.

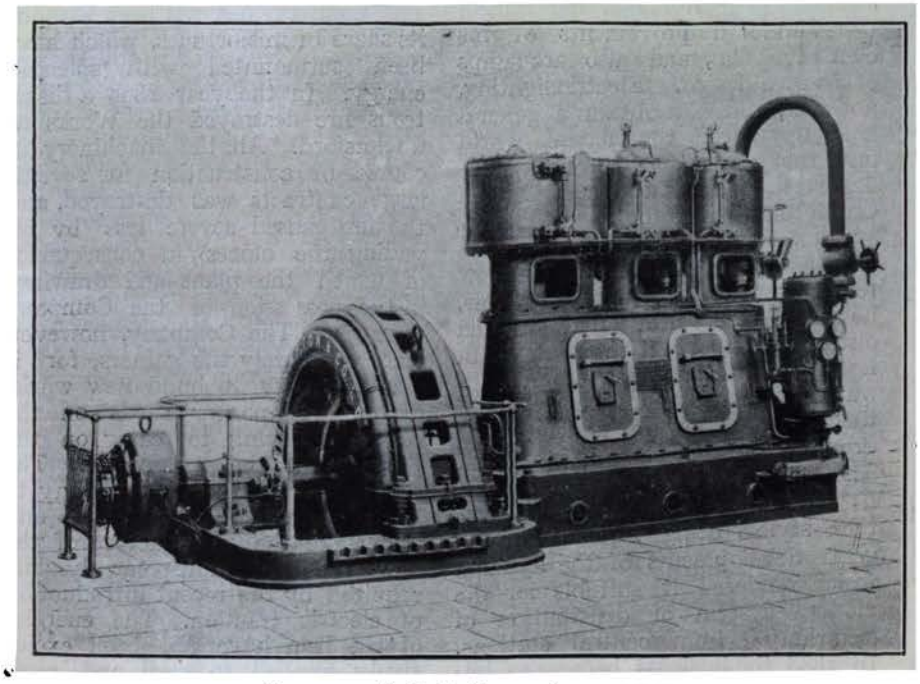
Mr. CHARLES HERBERT MORGAN CRITCHLEY, Agent, Bank of Bengal, Cawnpore. Mr. Critchley commenced his banking

Mr. C. H. M. CRITCHLEY.

career in the service of the Union Bank of Scotland, Inverness, in 1882, and subsequently joined the City Bank, London, serving in these two institutions till 1889, when he came out to India to enter the service of the Bank of Bengal, at the head office. Since that time, Mr. Critchley has filled various important posts in the Bank of Bengal, having held the agencies at Patna, Nagpur, Agra, Allahabad and Lahore. He was appointed to the Cawnpore Branch on 1st March 1906.

Messrs. CROMPTON & Co., Limited, Electrical Engineers and Contractors, 99, Clive Street, Calcutta. English Offices and Works, London and Chelmsford. This large and important firm has grown from small beginnings, being the outcome of the time when electrical engineering was first being taken up on a serious scale in England. The founder of the present Company, which now ranks as one of the largest of the engineering and contracting businesses in England and India, was Colonel R. E. Crompton, formerly a partner in the firm of T. H. P. Dennis & Co., brass-founders and general engineers. The Paris Exposition of 1887 was instrumental in attracting Colonel Crompton's attention to this branch of engineering, and a short while after he started the Chelmsford Works, manufacturing dynamo-electric generators of the Burgin type under improvements of his own invention, and also arc-lamps of his own design. Electric lighting, however, did not obtain a general hold upon the commercial world until the year 1881, when the incandescent lamp was introduced. Colonel Crompton at once took up the new system, introducing improvements into his dynamos to meet the new requirements. Previous to this, however, the firm had carried out some important installations in London and Glasgow, Victoria Railway Station in London being one of them. From now on, under Colonel Crompton's proprietorship, the business rapidly developed, Messrs. R. E. Crompton & Co., as it was then styled, being foremost in the great developments of the dynamo which rendered it suitable for the modern system of distribution of electricity from central stations. In 1888 the business became so important that it was necessary to alter its constitution, and the present limited liability company was the outcome. At this time some very large and important installations were entrusted to the Company, among others, in London, the two central stations of the Kensington and Knightsbridge Electrical Lighting Company, the three stations of the Westminster Electrical Supply Corporation, and the stations of the Notting Hill Electrical Lighting Company. The Chelmsford Works at this period were immensely enlarged, and the Company having ceased the manufacture of the Burgin type of dynamos with which Colonel Crompton had commenced, were making to their own designs large bi-polar drum-wound machines for direct coupling to high speed engines, and their "Trade" dynamos with double limb magnets and ring-wound armatures for small installations. Storage batteries were also made a great feature of their system, Colonel Crompton being a strong advocate of the advisability of always running generating plant at its full rated load as much as practicable. This led first to the "Crompton-Howell" accumulator, and later to the use of the same with the "Crompton, MacIntosh" automatic reversing booster for traction loads, which has introduced extreme economy in the working of traction stations. The Company has not been without its share of misfortunes, which have been surmounted with splendid energy. In the year 1895 a disastrous fire destroyed the Works at Chelmsford. All the machinery in course of construction for several large contracts was destroyed, and the fire caused severe loss by invading the offices, in consequence of which the plans and drawings in the possession of the Company were lost. The Company, however, were ultimately the gainers, for it was necessary to build new works at once, temporary sheds on the old site serving to carry on the business in the meanwhile. The new works enabled the Company to keep abreast of the times and undertake the manufacture of the new type of multipolar dynamo required by the recent introduction of electric traction. The energies of the firm have not been exclusively applied to civil and commercial life, both the Admiralty

and the War Office having availed themselves of the work of the Company. Their field lighting and search light plant was largely used in the South African War, and Messrs. Crompton's patterns of such plant have been standardized and adopted by the Regular Army with practically no alterations in the design. Their naval pattern search lights have held the field for twenty years in the British and foreign navies, and their business with the British Admiralty has included the complete equipment of war-ships with all electric gear for hoists and electrically driven machinery. Of late Messrs. Crompton have turned their attention to the electric equipment of mines, in which a large field is opening, as mine owners find the advantage of substituting electricity for older methods of working plant. The South African gold and diamond mines are largely indebted to this Company for up-to-date machinery. In India Messrs. Crompton have been most successful in spreading the use of electricity for every-day purposes. Calcutta owes its public electric lighting and power supply to this Company, who built the four fine generating stations of the Calcutta Electric Supply Corporation. The power developed at these four stations has a total of 10,900 horse-power. As is well known, the supply of electric power for lighting and fans in Calcutta is remarkably steady and constant, a feature which is due to the excellent design and workmanship of Messrs. Crompton's machinery. A similar installation is now under course of erection at Cawnpore by the firm for the Indian Electric Supply and Traction Company, who propose to work five miles of tramway as well as supply electricity for lighting and power. Madras has also called in the services of the firm, and contracts have been entered into between Messrs. Crompton and the Madras Electric Supply Corporation, Ld., to erect a large generating station for public supply of lighting and power, together with sub-stations and complete system of underground cables, the total available horse-power being some 5,360. This work is now in progress. Several other large contracts are coming on in India for installations of Messrs. Crompton's specialities, the exceedingly fine work that they have done in this line having drawn general attention in the country. They are well equipped to attend to the business, which must grow extremely large, as this huge country wakes up to electrical possibilities, having Branch Offices at Bombay: 8, Hummum Street; Cawnpore: 65A, Mall Road; Madras, Blacktown; besides the Head Offices at 99, Clive Street, Calcutta.



CROMPTON & CO.'S STEAM ALTERNATOR.

Mr. JAMES CURRIE, Chairman, Punjab Chamber of Commerce, Delhi, was born in Buteshire in the year 1854 and educated at Rothesay.

MR. JAMES CURRIE.

He commenced his business career in the firm of Messrs. William Graham & Co., of Glasgow, and came out to Bombay in the year 1879 in the service of Messrs. W. & A. Graham & Co. of that city. In 1881 he opened the firm of Messrs. Donald Graham & Co., at Karachi. Mr. Currie stayed at Karachi in the management of Messrs. Donald Graham & Co. for four years. In 1886 he decided to start in business on his own account, under the style of Messrs. James Currie & Co., and the firm has now offices at Delhi, Karachi, Cawnpore, and Amritsar. Mr. Currie has of late years given his more particular attention to business in the Punjab, where his business abilities are much esteemed by the commercial public. From 1891 to 1895 he was Chairman of the Karachi Chamber of Commerce. Within that period the Government conferred on the Karachi Chamber the honour of nominating a representative for the Bombay Legislative Council, and the Chamber elected Mr.

Currie to represent them. On his retirement from the Chairmanship, the members of the Chamber, by a special resolution, placed it on record that during his term of office the work of the Chamber had been carried on most efficiently, and much had been done for the benefit of the trade of the Port, while the status of the Chamber, as a body representing the interests of the mercantile community, reached a position higher than it had ever before enjoyed. Mr. Currie has taken considerable interest in public affairs and served as President of the Karachi Municipality for three and-a-half years, and as a member of the Karachi Port Trust for about four years. He was one of the original founders of the Punjab Chamber of Commerce, and was elected its first Chairman at the inception of the body in 1905.

Mr. T. G. CUYPER, Engineer, Builder and Contractor, Calcutta,

Mr. T. G. Cuyper.

was born at Chittagong in 1857, educated at Calcutta at the Christian Brothers' School, and subsequently at St. Xavier's College, under the Jesuit Fathers. On leaving school he was apprenticed to a large engineering and building firm in Calcutta, and having served his articles, entered the Public Works Department, but resigned later on, in order to set up in business for himself. One of the first large contracts entrusted to Mr. Cuyper in his private capacity was the old grand stand at the Race-course, which he built to the order of the Calcutta Turf Club. Mr. Cuyper has since done very large business in construction work for the local jute, paper, bone and flour mills. He was elected a Municipal Commissioner for Ward No. X in 1900, and served on the Corporation for six years. He did very good work when the plague was at its worst in Calcutta, in opening out the new road running east and west through Chandney; this locality near Chandney Hospital, called Goomghur, having been previously one of the most insanitary and congested in Calcutta. The whole of this congested area was acquired by the Corporation under the then Chairman, the Hon'ble Mr. R. T. Greer. The new road has been named "Temple Street." Mr. Cuyper was on the Committee of the Anglo-Indian Association before he left for England in 1905. He is now on the Committees of the Lawrence DeSouza Home for Widows, and the Deaf and Dumb School. Mr. Cuyper is a large landed proprietor in Calcutta.

Messrs. DAMODAR KHETSEY, 4, Church Gate Street, Fort, Bombay, Merchants and Importers of English and Continental piece-goods, established in the year 1801.

Mr. Khetsey Kara.

Partners: Khetsey Kara and Liladhar Kara. The firm is interested in piece-goods in general, but particularly in coloured and black Italians, coloured figure brocades, white satin and twill drills, white mulls and nainsooks, grey shirtings and dhooties and grey mulls. The magnitude of the firm's operations can

Mr. Liladhar Kara.

be judged, from the fact that they usually stand from year to year as either first or second among the native importing houses in Bombay. The firm makes a speciality of placing its goods on the market in proprietary brands: the "Pitch-kâri," "Pândân," "Mâlâ," "Toddy" and "Nal Chhaps" being well known and in much demand in all the principal markets of India, and the firm has correspondents in all the principal commercial centres of Europe. Mr. Khetsey Kara, senior partner and manager of the firm, belongs to the Bhatia community, renowned for its commercial enterprise. The piece-goods business was left to him as a heritage, inasmuch as his father and the other members of the family were well connected in the line, importing their requirements through European houses, when the trade in India was in its infancy. Mr. Kara, better known as Ka'ia 'Balva," held an equally important position in the line, as instanced in the fact that he took a leading part in the formation of the Mooljee

Jetha Market—the chief centre of the piece-goods business in Bombay, and one of the largest of its kind in India. The sobriquet "Balva" was associated with his name in connection with his having successfully cornered the piece-goods supply during the share mania epoch, and the family still continues to be known as the "Balva" family.

Mr. Khetsey Kara received his early education at the Elphinstone High School, Bombay, and completed his higher education at the Elphinstone College. After finishing his education he entered the piece-goods line, taking a step higher and importing direct, without employing a medium. In 1894 Mr. Khetsey started his business on his own account, but under the old name of "Damodar Khetsey," and has solely worked it up to its present level. Mr. Liladhar Kara, junior partner in the firm, joined in the year 1900, after finishing his education, and is now actively engaged in co-operating with his brother.

Messrs. DAS & Co., Lock and Safe Manufacturers, Calcutta. This firm, which has attained considerable eminence as lock-smiths, was

Babu K. L. Das.

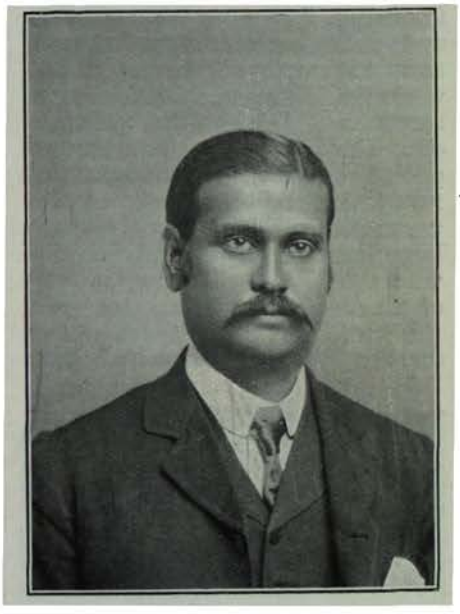
founded at Chitpur, Calcutta, in 1879, by Babu Krishna Lal Das, who was at one time employed as a clerk in a Government office. Babu K. L. Das felt that the clerical profession was not his true vocation, and noting the fact that, at the time, all good locks were of foreign manufacture, he perceived an opening for the introduction of the modern lock-smith's art as an indigenous industry. Without abandoning his employment he conducted experiments, lasting a couple of years, which convinced him of the feasibility of his project. At the expiry of this period he obtained the financial assistance of the late Kumar Indra Chandra Singh, Bahadoor, of the Paikpara Raj, whom he convinced that lock-making could be introduced successfully in India. Babu K. L. Das's first experiences were disheartening and would have defeated a man of less resolution. He had to engage, as workmen, native smiths from various villages, who had pursued lock-making in the crude Indian manner as a branch of their trade. These men claimed exorbitant wages and proved full of antiquated prejudices. They refused to learn new methods and were unteachable and unmanageable. As a last resource, Babu K. L. Das decided to train up boys, living in the locality, to the art, but here again he met with many obstacles from his countrymen, who could not be brought to see the advantages of a new departure of this kind. As a consequence, he could only get apprentices by making them handsome allowances; but having secured a number of youths, he set to work to train them in earnest. The business under these circumstances was, as may well be imagined, not very satisfactory. High wages to incompetent workmen, and allowances to apprentices who were not yet skilled enough to do good work, did not allow of successful financial results; but Babu K. L. Das persevered, and gradually, as the apprentices attained proficiency, he was able to discharge the old workmen, who were but a drag on the business. About this time, also, he introduced certain improvements into his locks, which he protected by patent His appliances were now so much improved as to warrant him in applying for Government patronage, which he obtained. Shortly afterwards, Lord Ripon's circular, directing all Indian Government departments to use goods of Indian manufacture wherever practicable, was issued, and the Government orders for Das & Co.'s locks were so largely increased that the firm had for a while to suspend sales to the

Babu W. N. Das.

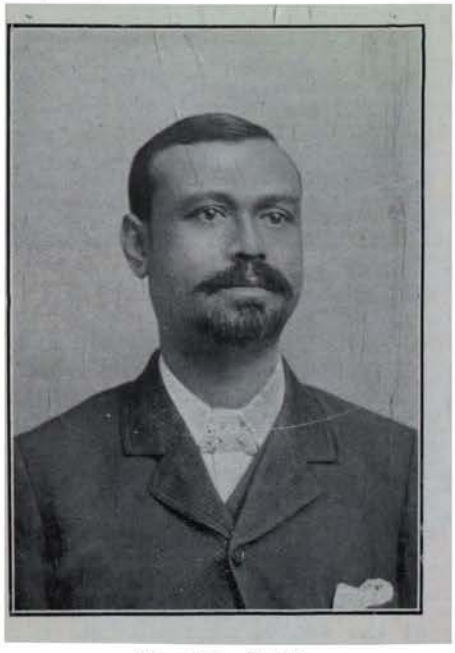
public in order to meet the Government demand. At this time Kumar Indra Chandra Singh, Bahadoor, who had so well supported Babu K. L. Das in his endeavours to benefit his country, died. The industry, however, was now firmly established, and Babu K. L. Das's time was so taken up with attending to the mechanical part of the firm's work that it became necessary to place the conduct of other affairs in the hands of an agent. Messrs. McGavin Smith & Co. (a firm since defunct), agreed to accept the sole agency and push sales. Babu K. L. Das, now free to devote all his time to manufacture, greatly improved his works importing a number of machine-tools to facilitate the processes. The constant labour and anxiety attendant upon the onerous task of establishing such a novel industry against discouraging opposition, told on Babu K. L. Das's health, just as he had succeeded in getting the business to work smoothly. Fearing that a breakdown would destroy his business, he initiated one of his nephews, Babu Woopendra Nath Das, into the craft and gave him a thorough training. In September 1891, he made over the entire

business, with the good-will, patent-rights, etc., to his nephew, as a gift, and retired up-country. Babu Woopendra Nath Das did not find the business devoid of trouble on taking it over. The workmen were dissatisfied on account of his youth, and many left to start in a small way on their own account. Those that remained gave trouble and about this time, to add to his embarrassments, Messrs. McGavin Smith & Co., the sole agents, wound up their business. Babu W. N. Das, however, had tact and perseverance enough to surmount these difficulties. Most of the men who had left to set up on their own account, failed, and asked to be re-employed at the works. Gradually the employés discovered the worth of the young proprietor, and his ability. The business again began to flourish, and it was found necessary to remove the manufactory to larger premises at 117, Cossipur Road, and by the addition of more capital, operations were much extended. The firm granted no more agencies, but by means of their own employés undertook direct sales to the public. A number of other manufactures were now added to the business of the firm. These included the manufacture of safes and boxes, specialities in electroplating, carpentry, tinsmith's work and general engineering. Owing to the introduction of these branches, the business was again removed to a more suitable place, 15, Cossipur Road, where it is now situated. The business in all its branches is now flourishing, and the manufactures of the firm hold their own against imported goods. The Indian Government deal with them largely, and both the European and Indian public patronize the firm extensively. Credit is due, both to Babu K. L. Das and his nephew, the present proprietor, for the indomitable way in which they have overcome the initial difficulties of their enterprise.

Messrs. NOGENDRA LAL DATTA & Co., Metal Merchants, 41, Strand, Calcutta. The firm deals in iron, steel, galvanized, corrugated sheeting and galvanized ridging. Their Agents in London are Messrs. John Elliott & Sons, Bush Lane House, Cannon Street; Tulloch & Co., 4, Fenchurch Avenue; and Gibbon & Co., 21, Lime Street. The firm was established by the brothers Jogendra Lal and Nogendra Lal Datta, both of whom are working partners. Mr. Jogendra Lal Datta is a Bachelor of Arts



Mr. N. L. DATTA.



Mr. J. L. DATTA.

(Calcutta), and is also a Bachelor-in-law. The firm carries on a retail as well as a wholesale business. They have other premises at 21, Darmahatta Street, Calcutta. Their Bankers are the National Bank of India, Ld. They are one of the most respectable of native merchants in the line.

Messrs. De NORONHA & SON, Hide and Skin Merchants and Government Contractors, Head Office, Cawnpore. The sole Proprietor of the firm is Mr. W. C. De Noronha, and their principal business is in hides and skins, which they export largely to the Continent of Europe and to America. They have Branches at Lucknow and Agra, and Agencies at Delhi, Meerut, Amritsar, Moradabad, Bareilly, and many other centres in India. Besides the hide and skin business, Messrs. De Noronha & Son carry on many other undertakings. They are proprietors of the Bailey Flour Mills at Cawnpore, started in 1888 by the present proprietor. This is a roller flour mill, and one of the largest of the kind that grinds flour for the public in India. The firm are also proprietors of the Surki Lime Mills at Cawnpore. This concern was also started by the present proprietor in 1888, and is admittedly one of the largest and finest of its kind in Northern India. Messrs. De Noronha & Son also carry on the business of Auctioneers, and are, by appointment, Auctioneers to Government. They hold weekly auction sales throughout the year at their premises in Cawnpore. They are also Advertising Agents for Upper India, representing in this line Messrs. D. J. Keymer & Co., of London and Calcutta. Their business includes the agencies for the Manchester Insurance Company and the *Indian Daily Telegraph*. They transact a large business as Forwarding Agents for goods to all parts of the world, through Messrs. Latham & Co., of Bombay, Karachi and London.

Mr. WILLIAM CONSTANTINE DE NORONHA, Sole Proprietor of Messrs. De Noronha & Son, was born at Cawnpore in 1862 and educated at St. Mary's College, Bombay. He is the only son of the late Mr. M. K. De Noronha, of Indian Mutiny fame, the friend of Brigadier-General Wilson of the 64th Regiment of Foot, who was mortally wounded near the present

Cawnpore Station Theatre in 1857. Mr. W. C. De Noronha, after leaving school, joined the Government Harness Factory School in Cawnpore, and in 1875 he entered his late father's firm. In the general business at present carried on he started a branch in photographic requisites, and subsequently founded a business in aerated waters for which he laid down a factory. He was a junior assistant in his father's firm, and by his keen attention to business he soon pushed his way to the front, and the management of the whole business was shortly placed in his hands. His father left the affairs of the firm entirely to his discretion. In 1888 Mr. W. C. De Noronha succeeded his father as sole proprietor of the firm. He has other large interests in Cawnpore, being a shareholder in the banks, and in most of the Limited Companies owning mills in Cawnpore. As an auctioneer, he has attained great success, and has disposed of many large concerns that have been brought to auction, notably the jute mill which went at the figure of Rs. 4,96,000. His father presented him with a golden auctioneer's hammer, in view of the fact that the natives entertained a superstitious feeling that large concerns should be knocked down with an implement of precious metal. He has also been presented with a silver hammer for daily use, and another golden one by Messrs. Cooper, Allen & Co. These tokens of the esteem in which Mr. De Noronha is held by all classes of business men, are of sterling quality and fine workmanship. He is largely interested in charitable institutions, to which he contributes largely. Recently he has given a handsome donation to Lord Roberts' Soldiers' Homes at Cawnpore. Mr. De Noronha's father was a famous man in his day, and held a golden trowel and hammer which were presented to him for his services in Rajputana as Superintending Engineer to the Tonk State.

Messrs. LOUIS De SOUZA & Co., Coach Builders, Cabinet-makers and Auctioneers, Allahabad. Proprietor, Mr. Louis De Souza. This business was started by the present proprietor in the year 1886, at first in a very small way for coach building, shoeing forge, and auctioneering, Mr. DeSouza at first doing all the work himself. As the work increased, the proprietor gradually took on a few hands, increasing the establishment as the business expanded, until now he employs from 125 to 150 workmen, including skilled artisans, carpenters, blacksmiths, painters, etc. The firm have attained an excellent reputation for the manufacture and repair of all kinds of conveyances, and they now do a very large business throughout the provinces. They are also manufacturers of all descriptions of cabinet work, furniture, etc., and contracting carriers to the "Pioneer." With

Mr. LOUIS DESOUZA.

this business Messrs. De Souza & Co. combine an extensive auctioneers' business. Their auction mart is 120 by 56 feet, where weekly auction sales are held. They also conduct open air auction sales and every description of business in this line. The proprietor, Mr. Louis De Souza, is of Portuguese descent, and was born in Delhi. He commenced business on his own account at the age of 25 years. He is a member of the Institute of British Carriage Builders, London, and was for three years a Commissioner of the Allahabad Municipality. He has taken great interest in the Volunteer movement, and served for 20 years as a trooper in the United Provinces Light Horse, receiving the long service medal.

Messrs. DINSHAW & Company, General Merchants and Commission Agents and Government Auctioneers, Meerut, United Provinces, were established in 1881, and have since carried on their business successfully. The firm import direct from the manufacturers in Europe, and their principal dealings are in wines, oilman's stores, fancy goods and general merchandise. The aerated waters manufactured by the firm are of high class, and well known throughout India. Originally founded by the father of the present proprietors, the late Mr. Dinshaw S. Dallas, the experience gained, combined with the energy put forth by the founder, tended to the success of the firm. Dinshaw & Co. are the local agents for shipping and forwarding for Messrs. Latham and Company, Bombay, and by means of this and their other agencies they are in a position to execute British and Continental orders placed with them. Mr. Jamshedjee Dinshaw, Managing Partner of the firm, was born in the year 1870, and educated at the Elphinstone High School, Bombay. After completing his education he joined his father in business, and for 16 years worked with him at Meerut, where he gained his practical knowledge in general mercantile pursuits. He took up the management of the firm after the former's death and has since carried on the business to a successful issue.

Messrs. DOSSABHOY MERWANJEE & Co., Merchants and American Agents—Head office, 6, Parsee Bazar Street, Fort, Bombay. Established in the year 1839 by the late Dossabhoy Merwanjee Wadia. Partners, Maneckjee Dossabhoy Merwanjee Wadia and Dossabhoy Framjee Dossabhoy Merwanjee Wadia. This firm has agencies all over the Bombay Presidency, and deals in exports and imports, but principally sewing machines, Indian blackwood carved furniture, carpets and curios. It is the oldest firm in Bombay having business connections with America, and the founder of the firm had the rare honour of being the American Vice-Consul in Bombay.

It also had the unique honour of receiving a visit from President Grant when he visited this country. They are the pioneers of the sewing machine trade in India, and were the first to introduce kerosine oil, "Painkiller," Pepperrell drills, and other articles of Amercian manu-

Mr. M. D. M. Wadia.

facture. The firm has been a very important link in introducing business connections between India and America, and is well known and enjoys the entire confidence and esteem of its numerous constituents and friends in both countries. It holds agencies for "Red and Barton's Electroplated Ware," "Scott's Emulsion" and many other articles.

The senior partner of the firm is Mr. Maneckjee Dossabhoy Merwanjee Wadia, whose portrait is given, and who has attained the ripe old age of 72 years. He is known to possess great business ability and sagacity, and is the guiding spirit of the firm, which he joined on the death of his father in the year 1865.

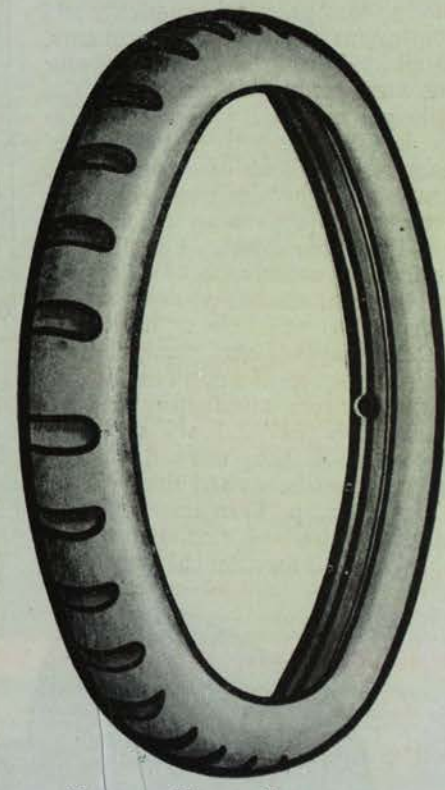
The DUNLOP PNEUMATIC Tyre Co., Ld., 49, Apollo Street, Bombay, is the Indian branch of the Dunlop Pneumatic Tyre Co., Ld., of London and Birmingham, who, 18 years ago, introduced to the public the Dunlop pneumatic tyres which have since become world famous.

Until the year 1897, the Company's Indian business was conducted from their Head Offices in London, but the increasing demand for Dunlop tyres in India and the East, necessitated the creation of a distributing centre, and the Indian branch was opened at Bombay in 1898. An immediate increase in business proved the wisdom of this step, and the Company's trade has gone on steadily increasing from year to year. A branch has since had to be opened at 14, Clive Street, Calcutta, for the convenience of customers in the Bengal Presidency.

Dunlop tyres are stocked by all cycle agents throughout India, Burma, and Ceylon, and there is not a single town of note where they cannot be procured.

Although the original Dunlop tent and later Welch and Bartlett patents have expired, genuine Dunlop tyres are still protected by inviolable patent rights, the Doughty patent process of manufacture distinguishing them from imitations made by the old fashioned processes. Materials employed in the construction of Dunlop tyres have always been the very best procurable, and the Doughty process enables the Company to render Dunlop tyres so conspicuously superior in respect to uniformity of size, weight, pattern and quality, freedom from liability to dust boils and stripping of treads, and a consequent degree of durability not approached under former systems of manufacture.

Section of Wired Tyre.



Dunlop Motor Tyre.

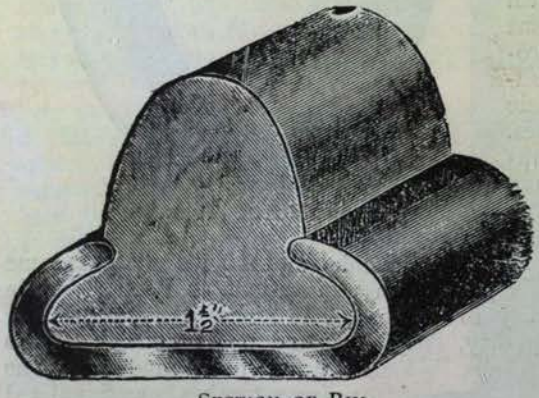
Dunlop motor tyres enjoy the same high reputation as Dunlop cycle tyres. The nineteenth year during which Dunlop Pneumatic Tyres have been made by the inventors has been signalized by a continuous series of successful tests, through which Dunlop motor tyres have emerged triumphantly. In British-made Dunlop motor tyres the desiderata of resilience and speed, combined with durability, are fully secured, as records prove, the most important of the motoring events having been secured by cars fitted with Dunlops.

The pre-eminent esteem in which Dunlop tyres are held by the trade was evidenced by these tyres being more numerously represented than any other make of tyre on the wheels of cars exhibited at the London

Automobile Shows. The trade in Dunlop motor tyres has increased enormously.

The Dunlop solid motor tyre, for motor buses, is the final outcome of many years' practical experience and continuous and costly experiments, in all kinds of solid tyres for motor buses and commercial vehicles. The principle of construction embodies the latest ideas both in methods of manufacture and of attachment, insuring a highly efficient tyre free from the objections to which other solid tyres are subject. Complicated mechanical contrivances for keeping the tyre on, are entirely eliminated without loss of efficiency and with the advantages of easy manipulation and increased resiliency. The Dunlop solid motor tyre is built up of the best quality of rubber obtainable specially selected for the purposes and possessing great resiliency and durability.

The Dunlop Company are also manufacturers of carriage tyres, rubber for all mechanical purposes,

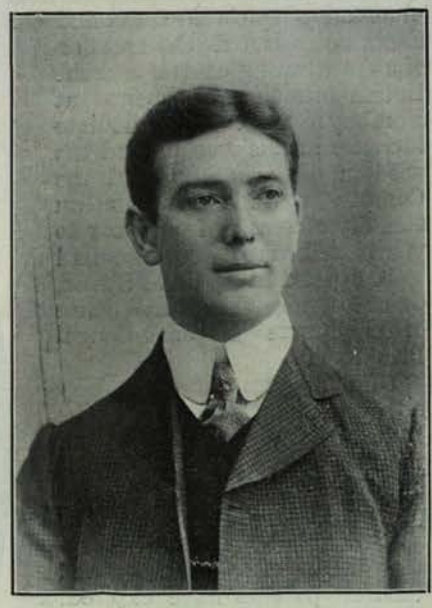


SECTION OF RIM.

etc., etc. They are contractors to the Admiralty, British and Foreign railways, India Office and War Office.

Mr. WILLIAM SHANNON TINKLER, General Manager for India for The Dunlop Pneumatic Tyre Company, Limited, was appointed to the post, and came to India to take up his duties in July 1904. He also holds the position of General Manager of the Dunlop Rubber Company for India, Burma, Ceylon, and the Straits Settlements.

Messrs. J. DUXBURY & Co., Ld., of 24, Forbes Street, Bombay; established in the year 1891, are Merchants and Contractors to the Indian Government, and their Head Office is in Manchester, England. They deal principally in Manchester piece-goods and all goods



Mr. J. G. MARTIN.

required for military equipment. They are Sole Agents in India to Messrs. Langworthy Brothers & Co., Ld., the well-known Manufacturers of Khaki Drill, and to Messrs. J. R. Gaunt & Son, Ld., Birmingham, Sword Cutlers, Button and Ornament Manufacturers. In addition to this the firm have their own Hosiery Mill at Tardeo, Bombay, known as the Duxbury Woollen Mill. Their Manager, Mr. John George Martin, who came to India in the year 1903, was born in England in the year 1878. Before coming to India he served as a Manager for several years in a cotton mill in Lancashire, and has practical experience of cotton and cloth manufacture. He was elected Manager to the firm in the year 1905, and is also the Managing Director of the Duxbury Woollen Mill, and represents his firm on the Chamber of Commerce, Bombay.

Mr. DWARKADAS DHARAMSEY, a prominent citizen and merchant of Bombay, was born in the year 1864 and received his education at The Elphinstone High School and St. Xavier's College (Sanscrit as second language). He comes of the well-known Bhattia family of Seth Kima Govind to which also the late lamented Seth Lakhmidas Khimji, a J. P. and a well-known Philanthropist, belonged. Mr. Dwarkadas, from an early age, gave signs of future advancement, and by dint of sterling qualities of the head and heart has risen to the position of one of the leading and most universally respected citizens of Bombay. His remarkable success in commerce and mill industry is due to his spirit of enterprise and resourcefulness; his business acumen, clear headed grasp of principles and de-

Mr. DWARKADAS DHARAMSEY.

tails, coupled with indomitable perseverance and enthusiasm for work. He is a liberal and discriminating patron of learning. Many a poor and struggling student owes his success and rise in life to his helping hand, and while ever ready to a similate new ideas and ideals of a progressive age, he is tenacious of all that is sound and wholesome in antiquity.

Young, bold and energetic, possessing great tact and foresight, Mr. Dwarkadas Dharamsey is known as an expert in the mill industry, and his advice in multifarious intricate questions regarding trade marks and other matters is keenly sought and

cheerfully given. In the midst of his various engagements and duties, he takes part in public affairs and is one of the most promising public-spirited citizens, anxious to serve the public and his country to the neglect and sacrifice of personal interest.

As a prominent member of the Bhattia community, he is held in high esteem and regard. He is a generous, if silent, donor, always prompt in helping the poor and the needy. His sound and practical knowledge of mill industry admirably fits him to be a member of the Boards of Directors of about a dozen Mill companies and other concerns. He is the working agent of the Tricumdas, Lakhmidas Khimji and Bombay Cotton Mills. The idea of starting a bank on the lines of the Bank of Bombay originated with him and he has the satisfaction of seeing the Bank of India, to the formation of which he has energetically contributed not a little, an accomplished fact.

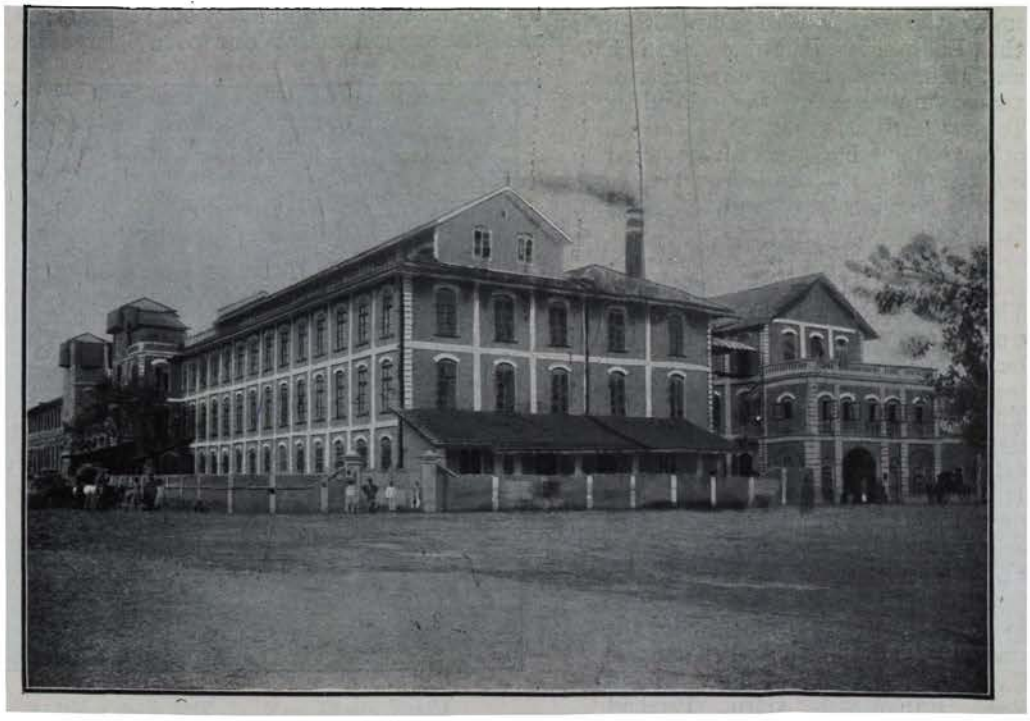
The Government of Bombay, appreciating his high qualities, simultaneously appointed him as a Member of the City of Bombay Improvement Trust, a Justice of the Peace, and a Member of the Municipal Corporation, a compliment as unique as it was thoroughly deserved: in the affairs of these and other public bodies, he takes a keen and active part. He is also a member of the Managing Committee of the Bombay Mill Owners' Association.

Mr. Dwarkadas' life and career afford a stimulating and inspiring example of what capacity joined to unselfish devotion to duty and a spirit of enterprise and hopefulness can accomplish: an example which his countrymen will do well to imitate.

Messrs. DWARKADAS VUSSONJEE & Co., Agents. Sole Proprietor, Mr. Naranji Dwarkadas. This business was established in 1873 by the late Mr. Dwarkadas Vussonjee, father of the present proprietor. The firm are Agents to the Jivraj Balloo Spinning and Weaving Com-

The LATE Mr. DWARKADAS VUSSONJEE.

pany, Limited, a joint stock association, owning a cotton mill situated at Tardeo, Bombay. This Company was founded in 1873, by Mr. Dwarkadas Vussonjee. The mill is styled after the well-known Jivraj Balloo family, from which Mr. Dwarkadas Vussonjee was descended. The original capital of the mill was Rs. 7,50,000, which was subsequently raised to Rs. 13,00,000, divided into 1,100 whole shares of Rs. 1,000 each and 800 quarter shares of Rs. 250 each. The mill is furnished with 34,500 spindles and about 700 looms. It employs about 1,300 hands. All the affairs of the mill are managed by the present proprietor of Messrs. Dwarkadas Vussonjee & Co., Mr. Naranji Dwarkadas, who is ex-officio Director and Chairman, with the assistance of a Board of Directors consisting of Messrs. Murarji Narotam Gordhandas and T. K. Gajjarl, and a secretary Mr. J. K. Parulkar. The registered office of the company is at Whiteaway, Laidlaw's Buildings, Hornby Road, Fort, Bombay. Mr. Naranji Dwarkadas has other interests in cotton as well, being the sole proprietor of the "Naranji" Mill at Parel, Bombay, which runs 20,000 spindles and employs about 600 hands. Mr. Naranji is also partner in the firm of Messrs. Glazebrook, Tejpal & Co., a firm devoted to cotton and insurance



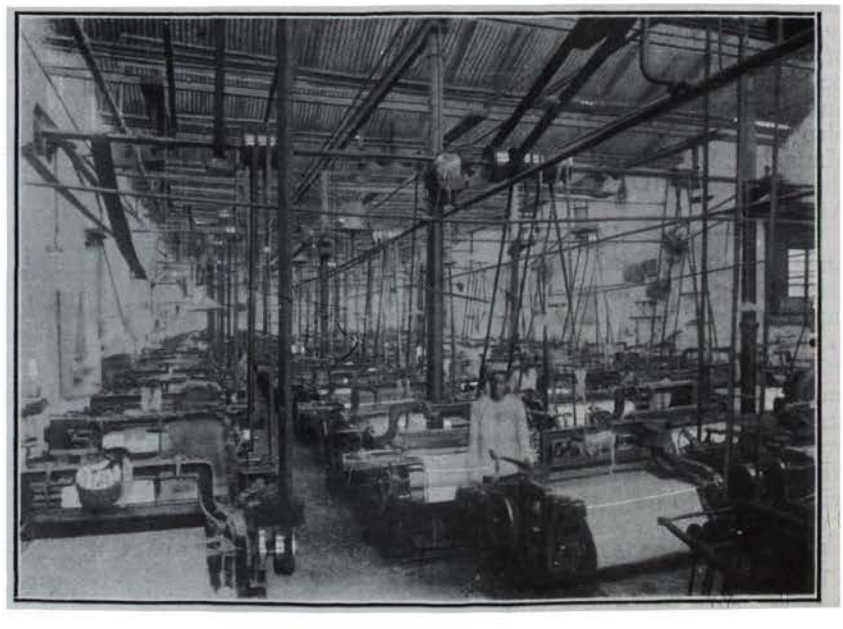
JIVRAJ BALLOO SPINNING AND WEAVING COMPANY'S MILL.

business at Bombay, and having the same address. He has also opened a pearl agency business. Thus, Mr. Naranji Dwarkadas is a landlord, mill-owner and merchant. He is a Justice of the Peace, leader

Mr. NARANJI DWARKADAS.

of the Bhattia community, and very popular among all other communities of Bombay. He also holds the position of Director of the Lakhmidas Khimji, Lakshmi, and Moon Mills, and is a member of the committee of the Goculdas Tejpal Charities, as well as of several other charitable and benevolent institutions. He resides at Dariav Mahel, Nepean Sea Road, Malabar Hill, Bombay.

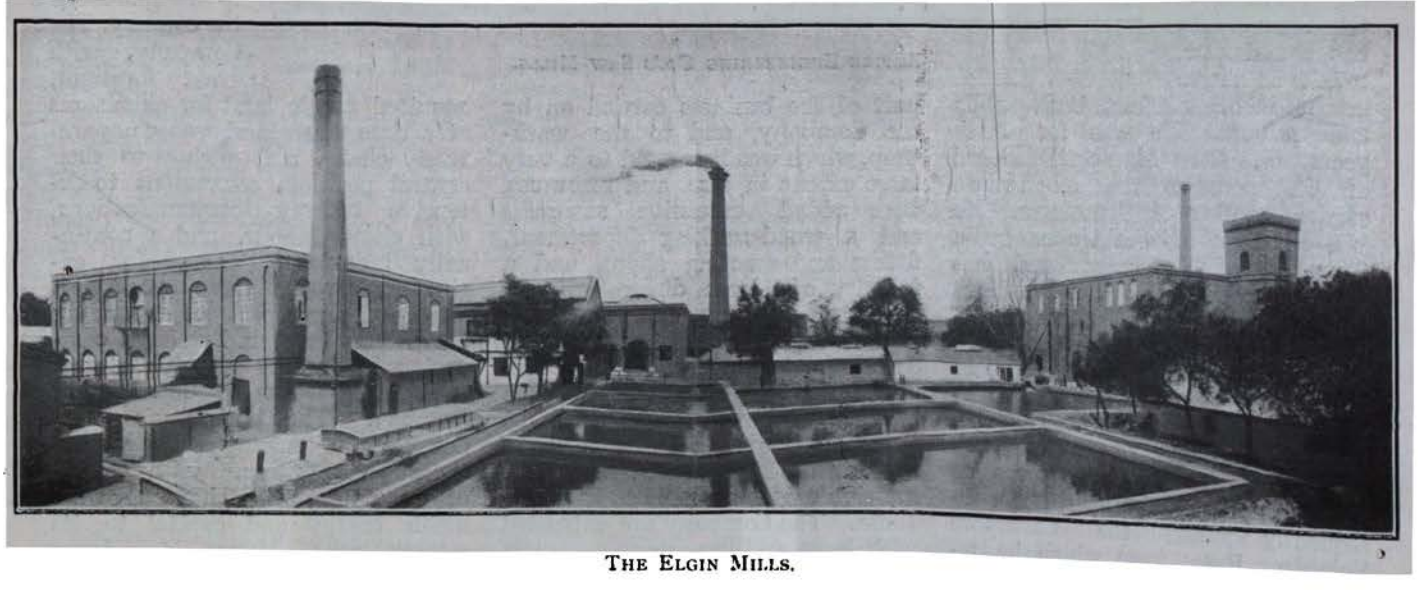
The ELGIN MILLS, Cawnpore. The mills belong to a private company who carry on the business of cotton spinning and weaving in all its departments. The establishment of the mills dates from almost immediately after the Indian Mutiny of 1857. It is the premier concern of the sort in India, and the idea of originating the industry of cotton spinning on a large scale in Cawnpore seems to have been due to Mr. Buist, who was in 1860 the station master at the newly-opened East Indian Railway, Har Chand Rae, Ramanand Goro Pershad Sukul, and Muflis Rai Ganga Sahai, with Babu Nanu Mal, who was an employé of Mr. A. Warwick, from Hinganghat. With these gentlemen several military men were shortly afterwards associated, among them Captain Aitkin, afterwards Inspector-General of Police, Oudh, and Captains Toby and Coghill. It was not till the year 1861, however, that the preliminaries were arranged and a limited company floated, under the style of "The Elgin Cotton Spinning and Weaving Company, Limited," Mr. Hugh Maxwell being one of the directors of the Company, and a Mr. Bradbury, the first practical manager. For the purpose of the business, about 25 acres of land, on which stood the ruins of the buildings known as the Old Hospital, situated on the bank of the river between the riverside Custom House at Parmit Ghat and the ruins of the old Magazine (blown up by the Nana Saheb during the Mutiny), were acquired. In about two years' time the mill buildings were erected and the machinery installed. In the year 1864 the mills commenced work. At first the establishment of this novel venture in India was a very uphill task. It was not enough to import machinery; the raw native hands had to be taught to use it, and every step needed the supervision of European experts. These difficulties being overcome by indefatigable work, and the native workmen transformed into fair spinners and weavers after the European style, very satisfactory yarns and cloths were eventually produced at the mills. The mechanical difficulties having thus been disposed of, there remained the commercial difficulty of the introduction of a new article to the consuming public. There was then practically no local market for the manufactured goods at Cawnpore. The country dealers, with the conservatism of the East, stood aloof, and it was only by dint of great push that a market was created, bundles of the fabrics being even distributed gratis to bring them into notice. The dealers soon discovered the value of the article, and those who had received trial samples gratis, returned as purchasers. But despite the most strenuous efforts, sales at first went slowly, and the success which was certain to come from the well-judged enterprise was not to be reaped by the pioneers of the industry. It proved too great a task for the company to establish the industry, teach the native hands to produce, and to carry stocks of goods, all the while waiting for the introduction of sales on a large scale. The enterprise struggled on for a few years; laying the foundation of the large success which in later time



THE ELGIN MILLS.

attended the business when taken up by others. At last, in 1871 the concern went into liquidation. The goodwill, stock, buildings, and plant were disposed of by public auction. The original capital sunk in the concern had been about three lakhs, and the upset price was put at two lakhs, There was one bid only, that of Mr. Maxwell, of Rs. 2,01,000. This was on behalf of Messrs. Begg, Dunlop & Co., of Calcutta, and Begg, Maxwell & Co., of Cawnpore. The property was knocked down to them at this price. Subsequently, Messrs. Begg, Dunlop withdrew, and Messrs. Begg, Maxwell took up all the shares. The concern then became a private business, with the partners in Messrs. Begg, Maxwell & Co. as share-holders, together with Mr. A. S. B. Chapman, who was admitted at about the same time. The names of the partners were Messrs. Hugh Maxwell, David Maxwell, J. MacDonald Dunbar, Ralph Maxwell, and Colonel Weller. About two years before the liquidation the old company had secured the services of Mr. Gavin Jones, a relative of Mr. Hugh Maxwell, to act as manager and secretary. His services were retained by the new concern until 1872, when he left in order to start the Muir Mills, which have also attained a prominent position in the Indian cotton spinning industry. At the time of the transfer of the business from the old to the new company, a turn had taken place in the affairs of the local industry. The pioneer work had been effective, and the goods were rapidly becoming acceptable to consumers. The native hands had been thoroughly trained and proved efficient, hardworking, and tractable. As soon as the new company started operations, the influential firm of Messrs. Baijnath Ramnath offered to finance it. They obtained the agency for the sale of all yarns turned out, and generally undertook the business of middlemen between the manufacturers and the smaller native dealers and weavers. Since then, the Elgin Mills have gone on from success to success, until their name is now a household word in India. Their manufactures consist of woven goods, drills, doosooties, turban cloths, towels, sheetings, dhoties and the well-known "twill lining" so universally used and appreciated for summer shirts; also grey yarn of all counts from 12's to 24's. Up to the year 1886 it was unusual to make any yarn of a lower count than 20's, but since that date a demand has set in for lower counts, such as 12's and 16's, which were never made in the olden days. The cotton obtainable locally lends itself better to the manufacture of the lower counts. As for the higher counts, cotton from Hinganghat and the Berars is necessary. The property of the Elgin Mills consists of 25 acres of freehold land, on which stand three separate mills containing 50,000 spindles and 600 looms. There are well-built offices and bungalows for the manager and staff, to which are added a club for the European staff, a dispensary and post office. The mills employ from 1,500 to 1,600 hands, and a further 500 to 1,000 in connected industries outside. The East Indian Railway siding to the mill is 3½ miles long. For over forty years the Elgin Mills have held Government contracts for the clothing of the police of the United Provinces, and also for many years a similar contract for the Punjab police. The Elgin Mills are the pioneers of the cotton-spinning industry in Upper India and the precursors of all the numberless cotton

Mr. W. G. Bevis.



The Elgin Mills.

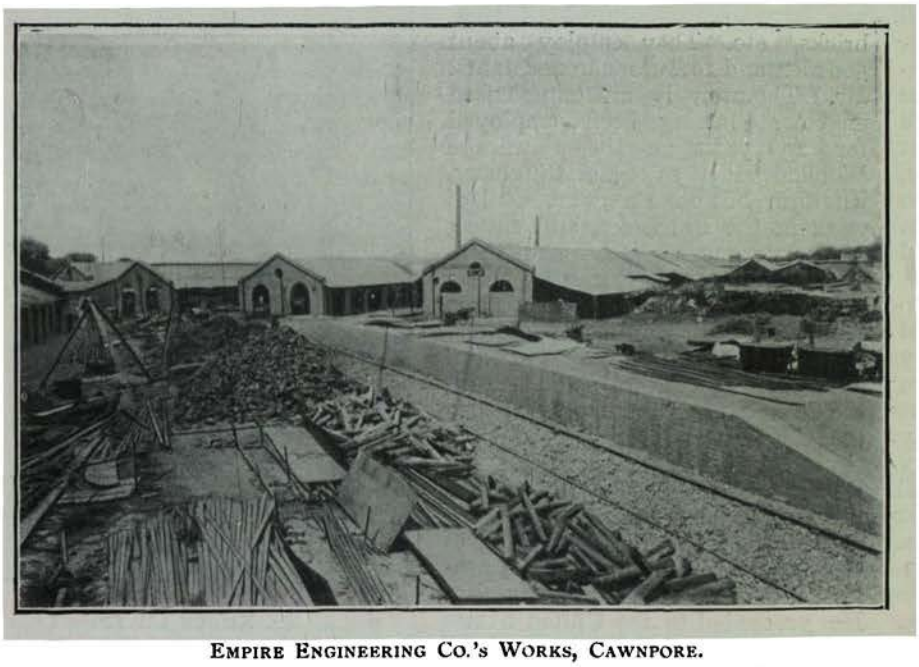
mills at present existing in the United Provinces; also the direct parent of the several mills at Cawnpore.

The Muir Mills, a similar undertaking, were started by Mr. Gavin Jones, formerly manager and secretary of the Elgin Mills. Another institution, the Cawnpore Cotton Mills, was established by Mr. John Harwood, at one time weaving master at the Elgin; and still another, the Victoria Mills, was started by Mr. Atherton West, also at one time the Elgin Mills weaving master. Of late years there have been further additions to the proprietary partnership. In 1900 Messrs. W. G. Bevis, T. E. Strachey, J. L. R. Reeve and Frank Dunbar were admitted partners, and still later, Major W. M. Tracey. Mr. W. G. Bevis entered the new company's service almost at the outset of its career, in 1867. He came out from England direct as assistant and has since risen to manager, and now to managing partner. Mr. Bevis, despite his busy life as assistant manager and managing partner of the Elgin Mills, has found time to take an active interest in other affairs, both public and private. He was for three years on the Municipal Board of Cawnpore as the nominee of the Chamber of Commerce. He is a member of the Upper India Chamber of Commerce and has filled the position of Vice-President and President of that body. He is a Director of the Cawnpore Woollen Mills, the Egerton Woollen Mills, the Cawnpore Sugar Works and other commercial companies. He was connected with the Cawnpore Light Horse for about ten years, as a non-commissioned officer, and subsequently joined the Cawnpore Volunteer Rifles, from which he retired with the rank of Captain.

The EMPIRE ENGINEERING Company, Limited. The rise of Cawnpore as a manufacturing centre brought about a local demand for workshops in which repairs, renewals and extensions could be carried out. Mr. Gavin S. Jones, and his son, Mr. T. Gavin Jones, set themselves to supply this want by the establishment of the above Company in the year 1898. The concern was successful from its inception, but the outside demands made upon the small foundry and machine shop at first laid down by the promoters speedily led to a great increase in the plant. The execution of local contracts speedily became but a small part of the business carried on by the Company, and to the workshop, which was increased to a very large extent in size and resources, were added extensive saw-mills and a wood-working department, fitting and erecting shops, and a foundry of large dimensions and capacity, all fully equipped with modern machinery, to carry out all descriptions of mechanical engineering work, from the building of a bridge or railway wagon, down to the shaping of a bolt. The works are now the largest and most progressive engineering shops in Upper India. The Company are entrusted with large and important contracts from the Railways, Public Works and the Ordnance Departments, in structural iron-work and wood-work, and they also meet all the requirements of the municipalities of Upper India, in connection with water-works, drainage-works, light railways and other municipal improvements demanded by modern conditions, which constantly call for the services of skilled contracting engineers. The Company also pay a great deal of attention to sanitary engineering. They have made a speciality of agricultural machinery, such as sugar mills, oil mills, flour mills, well-sinking apparatus, ploughs and other agricultural implements, which they are steadily improving and adapting to the special requirements of the country, and introducing to cultivators. The workshops alone cover 4½ acres of land and are conveniently situated in the heart of the industrial centre of Cawnpore. They have direct access, by means of their own railway-siding, to the five different systems of railway lines which radiate from Cawnpore to all parts of the country. The Company, with great foresight, acquired ample land for extensions at a time when land was comparatively cheap, and owing to their central position, convenient to extensive railway communications, with cheap labour, and a continually increasing demand for engineering work, these workshops have every prospect of expanding into a very large undertaking, comparing favourably with the largest engineering works in Calcutta or Bombay. The business of the Company is managed by Messrs. Gavin Jones & Son, Civil Engineers of Cawnpore, who have devoted much energy and capital to its establishment. Messrs. Gavin Jones & Son are intimately connected

EMPIRE ENGINEERING CO.'S SAW MILLS.

with all that is most progressive in Cawnpore industries. Mr. Gavin Jones, senior, was the founder of the cotton and woollen industries, and is very largely interested in this go-a-head centre of Upper India.



EMPIRE ENGINEERING CO.'S WORKS, CAWNPORE.

The firm of Gavin Jones & Son also undertake a considerable amount of civil engineering work, and have within the last two years established an electrical department, and have carried out several important undertakings in this line, through the experienced electrical engineers in their employ. This firm is a true exponent of the real Indian "Swadeshi" cult; and it is to the enterprise of such firms that India must look for the development of its internal resources, enabling the country to become self-supporting. To this end, it is to be hoped that the Government of India will, in time, remove the many restrictions in the matter of Indian firms competing for contracts, that hamper their movement; and that they will adopt a policy of encouragement.

The EXCELSIOR DAIRY FARM, Cawnpore, sole proprietor, Mrs. W. Hodgen. This is one of the best and largest dairies in India. It was started in quite a small way by the present proprietor about four years ago. Mrs. Hodgen commenced business with but a single cow of her own, but the purity of her supplies led to many friends urging her to increase her stock. As fast as she bought more cows to supply the demand, more and more customers came in, and she was obliged continually to add to her herd of cattle to supply the increasing demand, till she now owns about 150 head of stock. The Government is one of her best customers, and Mrs. Hodgen has a contract to furnish milk direct to the Government dairies at Cawnpore, Lucknow and Umballa. She also supplies the whole of the hospitals, and among the residents of the station of Cawnpore she has more than 400 customers to whom she forwards regular supplies of milk. Besides the dairy business, which Mrs. Hodgen has worked up to such fine proportions in so short a time, she has recently started the Excelsior Bakery for the purpose of supplying bread and confectionery to the residents of Cawnpore. This establishment has been modelled on the most approved modern lines and is entirely under European supervision. To this end, a European confectioner, of many years' experience, has been specially retained. The first quality bread is made from the finest Australian flour, raised with hop yeast. The Excelsior Bakery gives special terms to clubs, messes, hospitals, etc.

Messrs. FOY BROTHERS, Leather Manufacturers and Merchants, Cawnpore. This firm was established in the year 1872 by Messrs. Arthur and Edward Foy; at first in a very small way. Under the able management of the brothers the business increased, until now it is one of the best known in this line in India. Foy Brothers make a speciality of leather belting, for which one of their best customers is the Government of India who called attention to it in a resolution in the early eighties. Mr. Arthur Foy retired from the business in 1893, and Mr. Edward Foy has since conducted it alone. The firm confine their operations to the manufacture of leather goods by hand work, and give employment to a large number of skilled workmen. They make excellent saddlery, accoutrements, boots, etc. The North-West Tannery is another venture which was started in the year 1892 by Mr. Edward Foy, in conjunction with Mr. T. T. Bond, for tanning and manufacturing purposes. This venture was consolidated into the North-West Tannery Company, Limited, in 1893, with Mr. Bond as Managing

Mr. E. FOY.

Director, and Mr. W. B. Shewan, whose knowledge of tanning and experience in the details and management of tanneries helped much in the establishment of the Tannery and launching of the Company, as Tanner and Managing Secretary. Mr. Edward Foy is still a large shareholder in the Company. Mr. Edward Foy also started in conjunction with Mr. T. T. Bond, the Cawnpore Flour Mills, which were later consolidated into the present Cawnpore Flour Mills Company, Limited. Foy Brothers are also Agents for the Indian Aluminium Company, Limited, of Madras, and for the Kusanie Tea Company, Limited, of Almora, in the Himalayas. Messrs. Arthur and Edward Foy are the sons of Mr. Andrew Foy of Dublin. All were in the service of the Government of India in the North-West Provinces for many years. Mr. Arthur Foy had a Mutiny Medal and Mr. Edward Foy a medal for the Ambeyla Campaign of 1862 on the North-West Frontier of India. Mr. Arthur Foy died in the year 1902

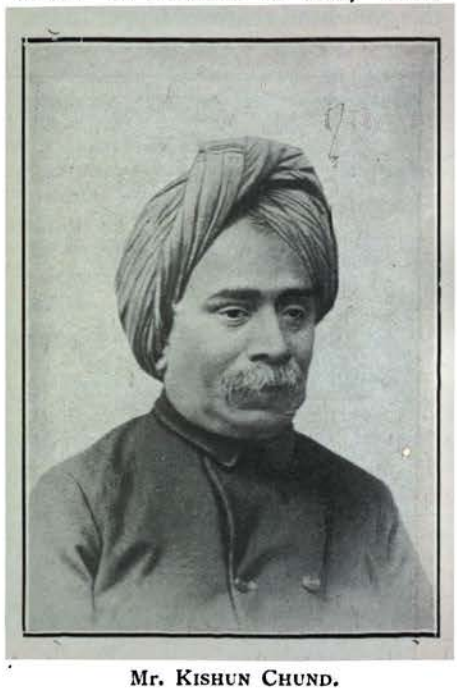
Messrs. J. FRIZZONI & Co., Builders and Contractors, Allahabad, and Branch at Agra and Cawnpore. This firm was established

A. STROMEYER.

in the year 1860 at Allahabad by Mr. Giusseppe Frizzoni. After conducting the business for about ten years, Mr. Frizzoni retired, and it was taken over by Mr. Rudolph Meyer who was succeeded by Mr. Julius Meyer. In the year 1886 Mr. Reitmann came in as a partner, and in 1891 Mr. Stromeyer. Later, Mr. Henry Thomson, A.M.I.M.E., England, joined the firm. The firm are large manufacturers of tiles, bricks, etc. They employ about 500 men and 10 European assistants. Mr. Thomson is an experienced engineer having been employed for 19 years at the Cawnpore Woollen Mills as Chief Engineer. The firm has done a great deal of work in the Provinces, and among other specimens of their skill there are standing the Queen Victoria Memorial at Allahabad, the Mayo Hall, Lady Muir House, the Soldiers' Institute, the All Saints' Cathedral and Roman Catholic Cathedral, the Convent, and many others; also the Government buildings on the Grass Farm, the American Mission, Bishop's Lodge, etc. Mr. Alfred Stromeyer, the present senior partner of Frizzoni & Co., is a native of Germany, where he studied the profession of an architectural engineer. He proceeded to the United States of America, where he practised till 1885, when he came to India to enter the service of Frizzoni & Co., being admitted a partner to the firm in 1891. Mr. Henry Thomson is a native of Aberdeen, Scotland, and acquired his mechanical education in his native city. He came to India to join the service of the Cawnpore Woollen Mills, on leaving which after 19 years, he joined Frizzoni & Co. He has been connected with the Cawnpore Volunteer Rifles for twenty years and has attained the rank of Captain. He is a keen Freemason, and is P. M. and R.A.M.

The GANESH FLOUR MILLS Co., Ld., Delhi. This enterprise was started in the year 1891 as a limited Company, with a capital of Rs. 2,50,000, which was subsequently increased in 1894 to Rs. 4,00,000. The buildings and mill were completed in 1894 and commenced work on 24th May in that year. In January 1906 the capital was increased to Rs. 5,50,000, and the plant increased to the capacity of 24 sacks per hour, and in July of the same year the capacity of the mill was again increased to 35 sacks per hour, each of 280 lbs.

The Company carry on the business of Corn Millers producing four kinds of flour, four of "atta," three of semolina, and two of bran. In addition to this, there



MR. KISHUN CHUND.

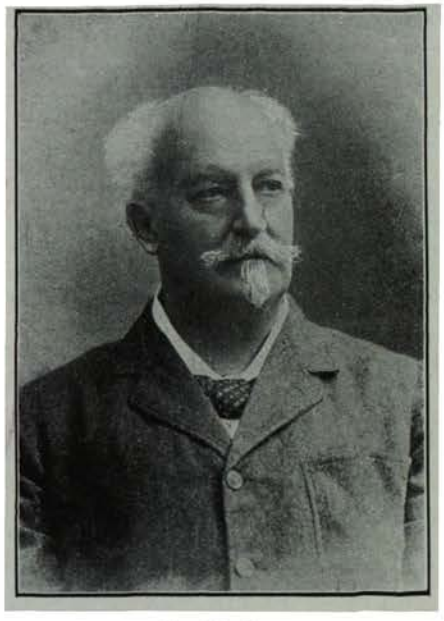
is barley-atta, barley and gram-flour. The processes are carried out in the most modern and up-to-date manner, entirely by machinery, actuated by a 200 horse-power steam engine, which is now being replaced by a 500 I. H. P. engine. Every attention is paid to cleanliness, the grain being thoroughly washed and sorted by mechanical operations before being ground, and entirely untouched by hand. There is a large demand for the produce of the mills which is shipped to all parts of India and Burma. The Company has large Government contracts for India and Burma. Besides the above, the mills produce four different kinds of fodder. The mills are situated to the west of Delhi, near the Rajputana-Malwa Railway and S. P. Railway, Panjabisarae Station, and are situated in extensive grounds surrounded by a high stone wall. The Mill building itself is 215 feet long by 65 feet broad and 68 feet in height. All the partition walls in the building are fitted with double wrought-iron fireproof doors, 45 in number. There are six godowns 80 feet by

40 feet for storage. There is a separate platform on the premises for loading up the produce to the railway, and by the excellent arrangements loading can be carried on for 24 hours continuously.

On the same premises are the bungalows for the Manager and employees; these, as well as the mill itself, are lighted throughout by electricity, and there are admirable fire-extinguishing arrangements. The mills are throughout under European supervision, the services of an expert European Manager, two Engineers and one Supervisor being entertained. Purchase and sale is conducted by the Managing Director. With the great grain-producing districts of Northern India at hand, it is not surprising that the enterprise should be so successful, grain to supply the mill being bought cheaply at Meerut and in the Punjab. The Company is a striking example of Native Indian enterprise, the seven Directors being all Indians, Mr. Kishun Chund being the Managing Director. This gentleman was born in the year 1839, and in 1858 entered the service of the Railway, which he left in 1867 to study law. Mr. Kishun Chund joined the Allahabad Bar in 1869. In 1870 he transferred his practice to Delhi and continued at the local Bar until the year 1894. His eyesight commenced to fail him in 1884, and he had the misfortune to lose it completely in 1890. This, however, has not prevented him from taking a very active interest in affairs, as attested by the establishment of the Ganesh Flour Mills.

Messrs. GILL & Company, Merchants, 4, Bruce Lane, Bombay. Established in the year 1887. Partners:—Messrs. H. Gill, W. Priestley, and J. L. Ainsworth. This firm deals principally in cotton. It has also one of the largest cotton forwarding businesses, having local dealers as its constituents, throughout India. The firm is also sole representative for the Phœnix Assurance Company, Limited, of London.

Mr. Humphries Gill, senior partner and the originator of the firm of Messrs. Gill & Co., came to India in the year 1869 and served in the celebrated firm of William Nicol & Company till the year 1878 when the Company failed. He then started business on his own account, and ultimately formed



Mr. H. GILL.

Gill & Company, and established it in the year 1887. He is Chairman of the Harvey and Sabapathy Press Company, which has done very well since it was taken over by the present Secretaries and Treasurers, under the Chairmanship of Mr. Gill.

Messrs. GLAZEBROOK, TEJPAL & Co., Merchants and Exporters, Bombay, established in the year 1901 by Messrs. N. S. Glazebrook, G. G. Tejpal and Naranji Dwarkadass. The firm do a large trade, their staple commodity being cotton, which is exported in large quantities to Europe, Japan and China. They are also agents for the British America Assurance Company. Mr. N. S. Glazebrook, the senior partner, was born at Liverpool and entered commercial life in the firm of Messrs. Lyon, Comber & Co. He came to Bombay in the year 1881 in the service of the same firm, in which he subsequently became a partner. When the firm of Lyon, Comber & Co., of Liverpool, decided to wind up their cotton business, Mr. Glazebrook decided to start business on his own account and established his present firm. Mr. Glazebrook is a prominent expert in cotton, and for several terms filled the office of Chairman of the Cotton Trade Association of Bombay. He is also an active member of the Bombay Chamber of Commerce, and a Director of the Standard Life Assurance Co., and the New Mofussil Co., Ld.

Mr. ROBERT GOODALL, Agent, Bank of Upper India, Lucknow, is the son of the late Mr. Robert Donald Goodall, Government Official, and a direct descendant of the famous Dr. William Carey, so well known as the pioneer missionary in India. Educated at West Drayton in Middlesex, Mr. Goodall began his banking career in 1891 in the branch of the Bank of Upper India at Simla, and has risen through various grades in the service of the Bank. He was Assistant Manager at Meerut and has also acted as Manager of the same bank during the absence of the General Manager. At various periods he has been Agent at all the branches of the Bank of Upper India, and after serving for four years as Agent of the Bareilly Branch was transferred to the Lucknow Agency in December 1906. Mr. Goodall is a keen sportsman, and his recreations are shooting, tennis and golf. He is the possessor of a very fine kennel of fox-terriers.

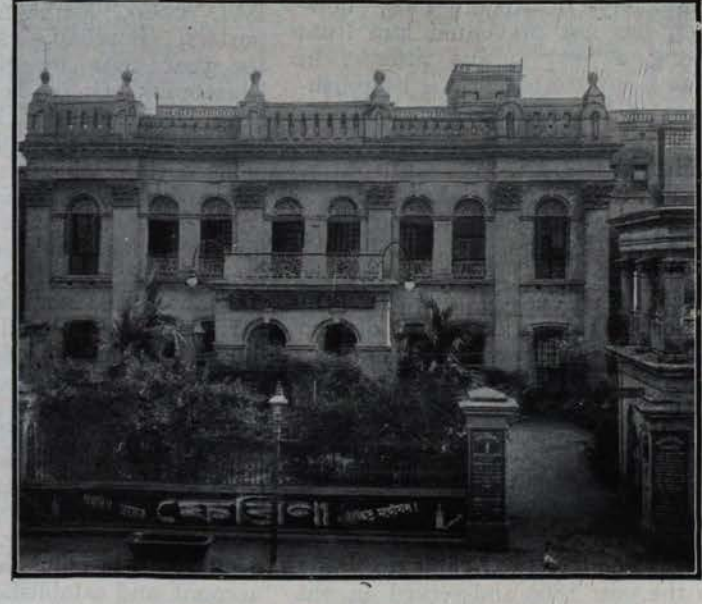
Messrs. R. C. GOOPTU & SONS, Chemists and Druggists, Calcutta. This firm was founded in 1901 by Mr. Ram Chandra Gooptu, in partnership with his sons. Mr. Ram Chandra Gooptu was the son of Dr. Dwarka Nath Gooptu, one of the earliest graduates of the Calcutta Medical College. Belonging to the Vaidya (or medical) caste, Mr. Ram Chandra Gooptu, following the example of his father, chose the medical profession, and after qualifying himself at the Presidency College, entered the Medical College. Later on he was called upon to assist his father in the firm of D. Gooptu & Co., which he managed successfully, and in which he obtained a partnership which he still holds. His experience showed him that there were still large possibilities in the drug and pharmaceutical trade, and he determined to put his sons

into the business, for which purpose he started as a wholesale and retail druggist, in partnership with his sons, Bejoy Krishna and Dhirendra Krishna, at 96, Clive Street. The rapid expansion of the business of the new firm necessitated a speedy removal to larger and more commodious premises at 81, Clive Street, the present address of the firm. Mr. R. C. Gooptu having thus satisfactorily inaugurated the firm, retired about this time, leaving the business in the hands of his two sons, with whom were now associated his other two sons, Krishna Kishore and Kamal Krishna. The proprietors of the firm are also the managing proprietors of the well-known Febrina Company, whose medical preparations are sold largely all over India, Burma and Ceylon. The "Febrina" manufactured by the company has attained a great reputation as a fever cure. The firm's main offices and godowns cover an area of 16,050 square feet in the most valuable commercial quarter of the town, this space being necessary to accommodate the very large stocks required for the execution of the orders handled by the firm. In 1903, Messrs. R. C. Gooptu & Sons found it necessary to comply with the wishes of their numerous constituents by establishing a branch in the residential quarter, at 27 and 28, Grey Street. This branch has led to a large expansion of business. They have now located their laboratory and manufactory on these premises, which is also the town residence of the proprietors. This is a magnificent building covering an acre of land, and erected at a cost of three lakhs of rupees by Mr. R. C. Gooptu. The business of the firm is divided into several departments. The local department attends to all calls from customers and enquiries from local surgeons and physicians. The firm has now the

Messrs. R. C. Gooptu & Sons' Head Office.

Mr. R. C. Gooptu.

Mr. B. K. Gooptu.



Messrs. R. C. Gooptu & Sons' Branch Office.

privilege of supplying medical stores to the Local Government, as the result of the energy displayed in this department. The mofussil department attends to all outstation orders and does a large business with the tea estates and various district boards. The purchasing department follows local and foreign markets and it is to the excellent management of this branch that the reputation of the firm for the purity and excellence of its drugs is due. The manufacturing department is under the supervision of trained and efficient chemists, who have placed the firm in a position to manufacture all preparations in strict accordance with the British Pharmacopœia. The firm also undertake the manufacture of surgical instruments and appliances, for which they have a growing reputation. They have also placed on the market many preparations of indigenous drugs, now well known for their therapeutic properties. The advertising department carries on extensive operations in the publication of pamphlets and newspaper advertisements, necessary in the conduct of a large business. Through their agency department the firm correspond with all important commercial centres in the world, and thus keep in touch with modern requirements.

The GREAT EASTERN HOTEL, Calcutta, has borne a conspicuous part in the public life of the city, and has been identified with many of the most notable events of the period since its opening in the year 1841.

The hotel was established by Mr. David Wilson on its present site, and was called the Auckland Hotel, after the then Governor-General, the Earl of Auckland.

The first Company to bear the name of "The Great Eastern Hotel, Wine and General Purveying Company, Limited," was incorporated on the 1st of March 1862, under the Indian Companies Act 19 of 1857.

The object of the organization of the Company was to purchase from Mr. David Wilson and others, the hotel and other business carried on by them at Nos. 1, 2 and 3, Old Court House Street, Calcutta, and the farm at Entally.

GREAT EASTERN HOTEL, CALCUTTA.

Old Court House Street is one of the principal streets in Calcutta; the Hotel occupying a frontage of 300 feet overlooks the gardens of Government House, the Calcutta residence of the Viceroy of India, and its situation in other respects makes it *facile princeps*, the best in the city. The hotel building contains four floors; the ground, or street floor, is occupied by the shops, the public restaurant, bar, and private tiffin rooms, the godowns, etc. The remaining floors are used solely for hotel purposes.

Some idea of the size and general appearance of the hotel may be obtained from the photographic reproduction of the exterior, which illustrates this sketch.

It is situated in the centre of the business portion of the city; directly opposite Government House; within five minutes' walk of the Post and Telegraph Offices and steamship landings; the electric tram cars, conveying passengers to every point upon their lines, pass immediately before its doors, and all railway stations are within a convenient distance.

The hotel contains 133 rooms, single and *en suite*, all of which have been arranged with a special view to the free circulation of air. Those who know how unendurable is an ill-ventilated bedroom in the tropics will appreciate this feature of the Great Eastern Hotel. The rooms are furnished with every convenience, including baths, and electric fans and lights are fitted throughout the hotel; during the season, the Viennese String Band plays during the evening, three nights every week.

The halls are wide and lofty, the main hall being laid with tesselated marble. The grand dining hall is lofty, spacious and well lighted, and seats comfortably 200 guests. Table accommodation for two or more may be engaged and retained, by residents, during their stay. Adjoining the dining room is the reading room, replete with a profusion of papers and magazines from all countries. The room leads out upon what is one of the most important features of the house, a broad

verandah extending the whole length of the hotel frontage, upon which are tables and chairs, where the guest may sit and drink his after-dinner coffee, smoke, and enjoy the cool evening breezes. The private billiard room also adjoins the dinner room, and is fitted cosily; it contains two first-class tables and appurtenances. In the main corridor is a well stocked news-stand, and on the walls hang cases containing the latest foreign telegraphic news, and steamer and railway time-tables. The Hotel Company own and operate their own stock farm. This is an item deserving of the greatest possible consideration; here all the mutton, poultry, and other supplies for the hotel are obtained. The sheep are gram-fed, which ensures to a guest at this hotel a far superior table than could possibly be obtained at houses where the meat is from grass-fed stock. Every attention is paid at this farm to the care and well-being of the stock, and absolute cleanliness is the prevailing feature. The Company do their own butchering, a special permit having been obtained from the Municipality to enable them so to do. This is the only special permit of the kind issued.

The Company also own and operate a Chutney factory which is second to none in the world. Their chutnies and other Indian condiments are sent all over the world and are everywhere recognized as the best obtainable. Their manufactures have obtained medals from the Melbourne, Amsterdam, Calcutta, International Health, and Colonial and Indian Exhibitions. The largest establishments in England and on the Continent are their customers, and their goods are used by the leading purveyors everywhere.

The factory is situated in a suburb of Calcutta, and a visit thereto is not only interesting but instructive. Experience has demonstrated that modern machinery will not turn out the high quality of goods demanded from this factory by the trade and connoisseurs, therefore the work is done in what seems to a visitor a most primitive manner. But the result demonstrates the wisdom of the management. What most attracts attention is the absolute cleanliness which pervades every department of the factory, which at times employs as many as 1,000 workmen.

The Company have always been purveyors by special letter of appointment to every Viceroy of India since they started in business.

They have an extensive Wine and Purveying business, and also do a good business in tobacco, cigars, pipes, toilet, travelling, camp and household requisites, fancy goods, cricketing, lawn tennis, football and gymkhana gear, toys, bicycles, etc., gentlemen's tailoring, outfitting, hair cutting, etc.

Mr. S. T. GRESHAM was born at Manchester in 1867. Educated at Bedford County School, Leamington College, and Owen's College, Manchester. Served his time with Messrs. Gresham & Craven at the Lancashire and Yorkshire Railway Carriage and Wagon Works. Came out to India with Mr. H. Heatly in 1889 to represent the Vacuum Brake Company at the Indian Brake Trials, which resulted in the Vacuum Brake being established as the standard brake on Indian railways, and in the year 1892 founded, in conjunction with Mr. Heatly, the Indian limited company known as Heatly & Gresham, Ltd., a detailed notice of which concern appears in another part of this publication.

Rai Sahib M. GULAB SINGH & SONS, Proprietors, Punjab Central Book Depôt & Mufid-i-Am Press, and General Publishers and Booksellers, Lahore and Calcutta. This business, which has now assumed very large proportions, was started in 1877 by Munshi Gulab Singh, who was at that time a teacher in the vernacular schools of the Punjab, and the author of a number of well-known text-books in the vernacular. As the demand for these books increased, the Munshi established the Press for the purpose of printing his own works. Printing facilities in the Province were not then what they are to-day, and when in 1881 a firm was required to take up the printing contract in connexion with the Census work, the Mufid-i-Am Press was given the contract, in open competition, by Sir Denzil Ibbetson, the Census Commissioner. The important work entrusted to the Press was carried out to the satisfaction of the authorities, and it laid the foundation of future success, for it was followed in 1887 by a contract for the printing and distribution of the whole of the educational text-books and maps issued under the authority of the Director of Public Instruction. For the purpose of distribution, the Punjab Central Book Depôt was established in connexion with the Press, and the work undertaken had a most important bearing on the educational progress of the Province. The books were turned out in first class style, and were made attractive by means of illustrations, while the price at which they were issued was lower than that ever previously charged. The production of maps,

The late RAI SAHIB MUNSHI GULAB SINGH.

too, entailed the establishment of a special department, with a large and skilled staff. But as the demands upon the Press increased, so also were its resources extended. Special buildings and store-rooms were added, to meet the various requirements of the establishment, and sale-rooms were provided for the convenience of customers. The publishing department also increased its scope, and special arrangements had to be made for the publication of works brought out by the firm on their own account. Among the works so issued have been many devoted to the Hindu, Mahomedan, and Sikh religions.

Steam-printing and chromo-lithography were first introduced into the Punjab by the Mufid-i-Am Press, and the firm have always kept abreast of the times by importing from the United Kingdom and America the latest printing and book-binding machinery, with all the most modern improvements. The firm have undertaken large printing contracts for various Government departments, and are at present the sole contractors for the work of the Director of Land Records, and of several other important departments. They employ a staff of upwards of 700 men, and at the last two Exhibitions, held in the Punjab, they have gained the highest award for their displays of books and educational appliances in use in the schools, and for maps and diagrams, as kept in stock to meet the requirements of the Educational Department.

Exterior of RAI SAHIB MUNSHI GULAB SINGH & SONS, Calcutta Branch.

In April 1907 the firm secured the contract from the Government of India for the printing of stock forms for use in the whole of the Government departments. This was a very large contract, necessitating the provision of printing facilities in Calcutta. A suitable site was secured in Lower Circular Road, and building operations were at once commenced. Special machinery was imported from England, Germany, and the United States, and the rapidity with which the buildings were constructed and the machinery got into position, constitutes a record for the whole of India. Composing work was commenced in October 1907, and in the following December the presses were at work, printing off a reserve stock of forms in anticipation of orders to follow, on the contract coming into force on the 11th April 1908. On the 20th March 1908, every machine in the establishment was working and the staff in full swing. Electricity is the motive power, and each machine has its own motor. A special feature of the new building is that it has been designed with a view solely to the purposes for which it is intended. It is self-contained, and all necessary work in connexion with the furnishing, &c., is carried out on the premises.

Rai Sahib Munshi Gulab Singh, the founder of the above Press, was born in 1848. He began life as a teacher, without influence or monetary resources to aid him. His leisure hours he devoted to the composition of books, and these attracted the notice of the educational authorities, and were approved by the Educational Department. Thus encouraged in his early efforts, he started the Mufid-i-Am Press, solely with the view of printing his own books; but he met with such success that he gave up teaching entirely, and devoted himself to his printing business, which his energy and enterprise soon placed on a solid basis. He rendered good service to the Government during the famine, and for this and other public services he was given the title of Rai Sahib in the Jubilee year, 1897. On his death in 1898, his eldest son, Rai Sahib Mohan Lal, took up the management of the firm, and later on the second son, Lala Lal Chand, also joined the business. The former now manages the Lahore main branch, while the latter is in sole charge of the newly-opened branch in Calcutta.

Messrs. HAJEE MOHAMED HAJEE ESMAIL & Company, Merchants, 9, Hornby Road, Bombay, established in the year 1863. The firm was started by Mr. Hajee Mohamed Hajee Esmail Sobani, a Justice of the Peace (1889). His brother, Hajee Yoosoof Hajee Esmail Sobani, a Justice of the Peace (1895), joined the firm on the 1st January 1870. The firm imports European piece-goods, and owns the Elphinstone Cotton Mills, purchased in the year 1903. They are situated at Elphinstone Road, and they have 32,000 spindles, 400 looms, and employ about 1,600 hands. Mr. Hajee Yoosoof Hajee Esmail Sobani, partner in the firm, was born in the year 1856 at Bom-

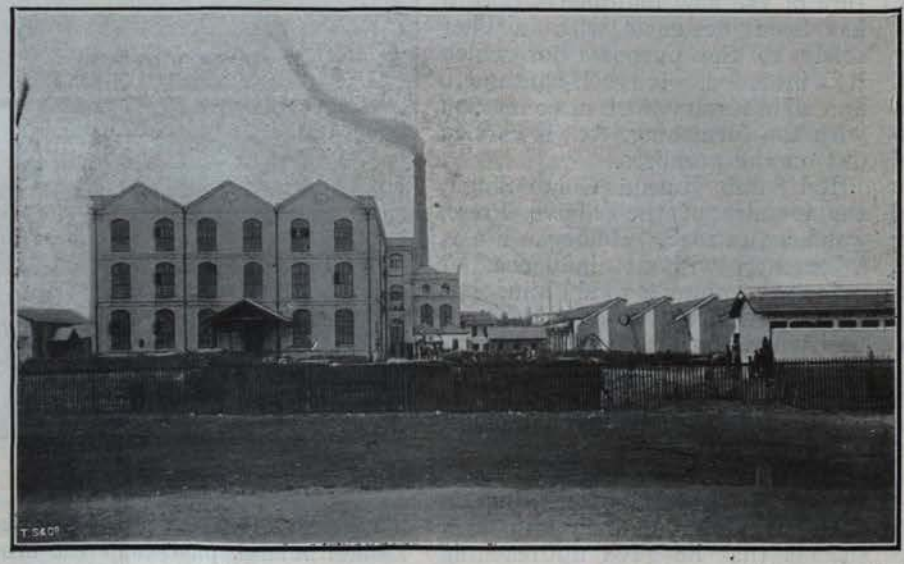
Mr. H. M. H. E. SOBANI.

bay, and was educated there at a private school. He joined his brother's business in the year 1870, and gained the whole of his commercial training in his office, having been connected in business with

Mr. H. Y. H. E. Sobani.

Mr. Oomer M. Sobani.

him for the past 37 years, carrying on the business very successfully by themselves. He is an Honorary Magistrate in Bombay and has been a member of the Municipal Corporation since 1895. He is a great supporter of education in general and female education in particular. In conjunction with his brother he started and established a Girls' School in 1883—the first school of its kind in his community in Bombay. He provided the "Anjuman-i-Islam" with a "hostel," the construction of which cost about 29,000 rupees, 17,500 of which was contributed by the brothers. This "hostel" was built in memory of their father (the late Mr. Hajee Esmail Sobani). Mr. H. Y. H. E. Sobani is an Honorary Secretary to the "Anjuman-i-Islam," and, jointly with his brother, has also established a Free Reading Room and Library in memory of his deceased eldest son, the late Mr. Sidick Mahomed Sobani, who died at the age of 21 years on 30th November 1905. He has founded a scholarship for the benefit of a Mahomedan attending St. Xavier's College, and is a well-known reformer of the Cutchi Memon community. He visited England in the years 1892-93 and 1895-96 for the purpose of gaining more experience in his business, and making purchases, personally. He has two sons. The one, Mr. Oomer M. Sobani, aged 18 years, is engaged in the office with his father, acquiring the necessary commercial knowledge, and he is the first son of a Bombay Millowner who has passed the first class in the Cotton Carding and Spinning Examination of the City and Guilds Institute, London, held at the Victoria Jubilee Technical Institute, Bombay.



Elphinstone Mill.

The HOLLAND-BOMBAY TRADING Company, Limited, have their Offices in Bombay at 39, Esplanade Road. Their Head Office is at Amsterdam under the management of a Board with C. W. Freese, Esq., Managing Director. This gentleman has a large Indian experience, having himself established the Bombay Office. They have a Branch at Calcutta, and Agencies in all leading towns in India. Their principal trade consists of importing grey and white shirtings, prints, Bradford goods, silk, and other fancy goods. They opened their own firm in Bombay in the year 1891.

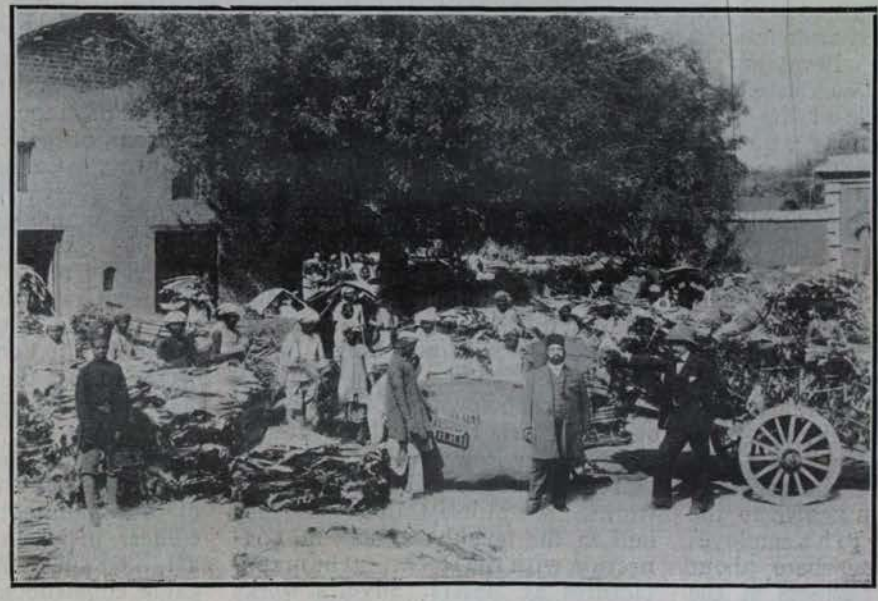
Mr. John Van Rykom, the Manager of this firm, was born in Amsterdam, Holland, in the year 1868. He was also educated in Holland. After finishing his training he travelled through the various States of America, and made a long stay in California in the employ of a leading Bank. Afterwards, he went as Manager of an old established Dutch firm, to Persia, which was carrying on a large business, with a Head Office in London. From there, in 1905, he came to Bombay to take over the charge of

the Holland-Bombay Trading Company, Limited. He is careful and keen in his business and has personally visited Calcutta and Karachi in the interests of the Company, studying local peculiarities and requirements. He represents the firm in the Bombay Chamber of Commerce.

Mr. H. M. HALIM.

Mr. HAFIZ MOHAMMED HALIM, Hide and Skin Merchant and Commission Agent, Cawnpore. Telegraphic Address: "Helal;" Codes A B C, 4th and 5th Editions. Mr. H. M. Halim established this business in the year 1896 for the purpose of dealing in hides and skins. Beginning in a small way, the business has steadily increased until it now gives employment to about 100 hands. The godowns have been increased in proportion to the demand for additional space, and they now cover upwards of 4,000 square yards. Here hides and skins brought in from the outstations, are received, selected, weighed, and baled for shipment. The firm have many agencies at outstations for buying hides and skins, etc., at Bombay, Madras, Delhi, Agra, Jhansi, Ajmere, Lucknow, Amritsar, and throughout the North-West of India. They are Agents to Messrs. Thomson, Lehzen & Co., Ld., of Calcutta. A large export business is done by the firm, goat skins being largely exported to Europe and North America. Mr. H. M. Halim was born at Patiala, in the year 1867, and there he received his education. He acquired a knowledge of the business of a hide and skin merchant with his father, who was established in that line at Delhi. He left Delhi to open his present business at Cawnpore. He is the owner of a large amount of property at Cawnpore, and a member of the Municipal Board of the same city, also an honorary magistrate. Mr. Halim is a member of the firm of Noronha and Halim, Contractors to the Government H. & S. Factory, at Cawnpore, which institution they supply with hides, salted buffs, cows, goats, etc., and he is also a member of the firm of the Cawnpore Tannery, H. Abdul Karim and H.M. Halim, Tanners, who carry on an extensive business in supplying leather throughout North-Western India.

H. M. HALIM'S PRESS HOUSE.



H. M. HALIM'S GODOWNS.

Messrs. K. M. HEERAMANECK & Co., Church Gate Street, Bombay. Established in the year 1861 by the late Mr. K. M. Heeramaneck. Present proprietors, Messrs. Maneckjee Muncherjee Heeramaneck and Rustomjee Maneckjee Heeramaneck. This firm manage the Queen Spinning and Weaving Company, Limited, as Secretaries, Treasurers and Agents, and also the Bombay Cotton Press Company in a similar capacity. The Queen Mills were established in the year 1883, with a capital of 8 lakhs, divided in 800 shares of Rs. 1,000 each (the present market value of each share being nearly Rs. 1,200). The mills have 35,760 spindles, and employ 750 hands. The founder of the firm, the late Mr. Kaikhusro M. Heeramaneck, after finishing his primary education, had to seek an appointment in early life owing to unfavourable circumstances. He first served the B. B. & C. I. Railway Company as a cashier, but he gave up the appointment soon and became a share-broker in the year 1868. He was then appointed a Director of the Framjee Cowasjee Patent Press Company and afterwards as Secretary and Treasurer to the Bombay Press Company, managed at that time by Messrs. Bryce, Brown & Co. He then took over the management of the Bombay Press Company till it was transferred to Messrs. Gaddum & Co. When Messrs. Gaddum & Co. removed their presses up-country Mr. Heeramaneck formed a shareholders' company and after making some additions and alterations in the original Press, conducted its affairs, under the style of the Bombay Cotton Press Company, through his own firm. At this stage he came more in contact with the cotton industry, and his experience resulted in the establishment of the Queen Spinning Mills, for which his firm were appointed agents. He also floated the concerns known as the Star Mills and the Britannia Mills, and also many cotton presses. He was a Director of the Queen Insurance Company and the Coorla Mills. He took a prominent part in all questions connected with cotton. His generous disposition made him known to the public and especially to his employés who numbered somewhere about 3,000. The whole business of the firm now devolves on his brother Maneckjee, who had the good fortune to receive a sound and practical training from him during his lifetime. Mr. Maneckjee is assisted by his son, Mr. Rustomjee, who is a very energetic and promising young man and whose assistance to the firm is of great value.

The INDIA RUBBER, GUTTA-PERCHA & TELEGRAPH WORKS Co., Ld., 1-1, Fairlie Place, Calcutta. Electrical Engineers and Manufacturers of "Silvertown" India-Rubber, Gutta-Percha and Electrical goods. Head Office, 100-6, Cannon Street, London, E.C. Like many other great Companies the India-Rubber, Gutta-Percha and Telegraph Works sprang from very small beginnings. In the year 1852, the well-known firm of Cornhill outfitters, Messrs. Silver & Co., purchased an acre of ground at West Ham, in a neighbourhood now known as "Silvertown." On this site the Company erected their existing manufactory, built, in the first instance, with the object of accommodating their Water-proofing works, which they had transferred from their original site at Greenwich. There was nothing in those days at the works remotely connected with electricity, in which the Company have since made a gigantic reputation. In 1852, electricity, except for the electric telegraph, then in its infancy, was but the plaything of the scientific. At that time West Ham itself was a wretched district, practically cut off from London, which lay so near, by the absolute want of roads, the only way to reach it being by the river wall. West Ham itself bore a far from savoury record, having been the haunt of smugglers and river pirates, besides the head-quarters of highwaymen, among whom was the famous, or notorious, Dick Turpin. The establishment of Messrs. Silver's factory was well timed, for in 1855 a great change came over the neighbourhood owing to the opening of the Victoria Docks, which extended from near Bow Creek to within a short distance of Messrs. Silver's works. A railway line was also laid in the neighbourhood, in connection with the Docks. The manufactures at Messrs. Silver's works were at first confined to the water-proofing of cloth with India-rubber, and belting for machinery, but, shortly after their inception, the manufacture of other kinds of rubber goods was undertaken, and it was here that the important process of vulcanising rubber to render it hard without destroying its resilience, was discovered by accident. Captain Silver describes the method in which this invaluable invention came to light. In experimenting with hollow India-rubber balls made of sheet rubber, in a bath of melted sulphur, one of the balls fell to the bottom of the bath and remained unnoticed for a week. When recovered, it was found hardened into ebonite. The firm were not slow to see the possibilities of the vulcanised rubber which by reason of its impermeability to moisture has replaced wood in numberless articles, and on account of its resistance to chemical action has become indispensable to laboratories. Its electrical nonconductivity has made it invaluable as the basis of all electrical instruments, and its durability, combined with its other properties, has made possible the modern rubber-tyred vehicle of all descriptions, from perambulators and bicycles to motor cars of enormous power. For the next twelve years the works increased in importance, the firm's manufactures finding an extended market, and in 1864 it was decided to convert the business into a limited liability company. A prospectus was issued and on the Provisional Committee appeared such well-known names as Sam Mendel of Manchester and William Fenton of the Great Western Railway. Colonel H. A. Silver and Mr. J. W. Williams were the first managing directors. After holding office for a year, these gentlemen retired in favour of Mr. Mathew Gray, who was quick to see the modern possibilities of the staple of the Company, and under his auspices the business rapidly made progress towards its present proportions. It was under Mr. Gray that the Company first turned their attention to the great problem of the manufacture of submarine cables, in which they have since attained such eminence. The first cable constructed by the Company was in 1867, a year after the laying

of the first successful Atlantic cable, and it was to the order of the Western Union Telegraph Company, to connect Key West with Havana. This cable is still working, after all these years of immersion. For the next few years the most important business of the Company was the manufacture and laying of submarine cables, and in carrying out this business they acquired a small fleet of steamships which were specially fitted for the laying of the cables constructed at the works. The first of these to be specially built for the business was the "Silvertown," which was launched in the seventies and was at that time the largest cargo vessel afloat, with the exception of the "Great Eastern". A ship of this size was rendered necessary by the order for the laying of 3,000 miles of cable on the West Coast of Central and South America. This ship the Company procured from the telegraph engineers, Messrs. Hooper & Co., and she was originally named the "Hooper." Her cable tanks were actually one-third larger than those of Brunel's leviathan. The "Silvertown" was not allowed to remain idle when not engaged in laying cables, but was employed as a general cargo vessel. The "Dacia" was another famous cable ship of the Company. This vessel was originally built for the Mediterranean fruit trade, but after her purchase by the Company in 1869, she was cut in two and lengthened by forty feet, and otherwise altered and adapted to the purpose for which she was required. She is the doyen of cable ships. The "International," which laid the Channel cable, was for many years a useful vessel to the Company; but she was sold and eventually wrecked off Beachy Head. A fourth cable ship in the possession of the Company is the "Buccaneer," which has done much useful work in laying cables in water too shallow for the large vessels. The total amount of submarine cable made at the Silvertown works up to the end of the last century was upwards of forty thousand miles. Since 1888 the Company have laid many important cables, having connected the Canary Islands with each other and with Cadiz, and put into communication the Cape de Verde Islands and all the important towns of the West Coast of Africa, as far as the Mossamedes, with Europe. They have also laid a connecting link between Mossamedes and Cape Town, thus providing a much needed alternative cable route to the Cape. The Company has also extended the cable system on the East and West coasts of America, and laid a cable under the Atlantic from St. Louis, Senegal, *viâ* the Island of Fernando Noronha, to Pernambuco in Brazil. The greatest feat of the Company in this line, however, was the laying of the French Atlantic cable from Brest to Cape Cod, this being the longest cable in the world, 2,800 nautical miles in length. In other lines of rubber goods, Silvertown retains its pre-eminence. Notwithstanding the great development of rubber for industrial purposes, the earlier manufactures are still going strong. Balls of all descriptions, the manufacture of which was one of the earliest uses to which the article was put, are still turned out

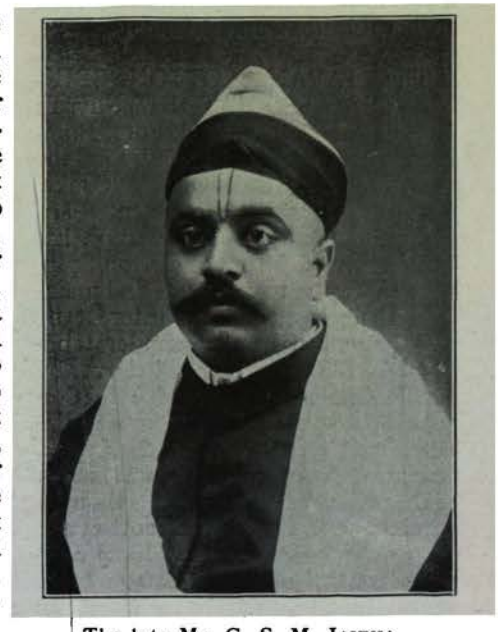
INDIA-RUBBER, GUTTA-PERCHA AND TELEGRAPH WORKS CO., LD., 1/1, FAIRLIE PLACE, CALCUTTA.

from Silvertown in huge quantities. Every kind of rubber ball is made at Silvertown. Foot-balls alone show 600,000 as the output for one season. Tennis-balls are even more numerous; while of gutta-percha golf balls, the number issued from the works exceeds that of the two former descriptions put together. The enormous variety of different goods which are now made from india-rubber and gutta-percha, places this substance in the forefront of the list of raw material utilized in commerce and the arts and sciences. The whole civilized world now appears to depend upon rubber, and civilization goes rubber-tyred and rubber-cushioned. In fact, so great has been the development of the uses to which this article has been put, that it is difficult to see how the present stage of progress could have been reached without it. In the ordinary little conveniences of life, rubber is in constant evidence. Tobacco pouches, rings for aerated water bottles, bands for papers, valves and washers of all descriptions, tubing for domestic uses, and a thousand other everyday requisites are made of rubber; and no substitute has yet been found. In the form of ebonite, it supplies as many more requisites of a small kind; buttons, combs, paper-knives, pens, thimbles, bottle-stoppers, and a hundred other nicknacks. Considering the millions of such small articles daily needed, it is not surprising that this Company, which was first in the field of manufacture, should have reached such important dimensions. Every kind of sport, too, draws largely on their manufacturing resources. Rubber articles are indispensable in football, cricket, tennis, golf, and many other games which are continually being played all over the world, and here alone is a limitless demand for rubber. In electricity, progress would be well nigh impossible but for rubber. As an insulator, vulcanite stands without peer, and it enters into the construction of every piece of electrical apparatus. The comfort of railway travel largely depends on rubber buffers for the cars, and rubber cushions for the carriages. Safety on railroads is assured by the rubber vacuum brake fittings. But perhaps the latest uses to which rubber has been put exceed in importance all the foregoing. The invention of the rubber tyre, especially in its latest pneumatic form, has taken all the jolt and jar out of ordinary vehicles, and has rendered possible the motor-bicycle and the motor-car, the two greatest developments of locomotion of late years. The enormous utility of rubber spells prosperity for a Company such as Silvertown, which has carried on the manufacture for so many years and has reduced it to a science. The variety of articles which the Company manufacture is only faintly outlined in the foregoing. The Silvertown manufactures enter into the daily life of the world. The works have developed in proportion to the growing importance of the industry. The English works at Silvertown now occupy over seventeen acres of ground on the North bank of the Thames. On one side, the works have the river, on which a private wharf abuts, supplied with cranes, derricks, winches, and every accommodation for loading direct into vessels which carry the manufactured goods to all parts of the world. This wharf is also utilized in bringing the raw material to the works. On the other side, a siding from the railway enters the factory, affording like facilities for rail-borne carriage. The permanent number of hands employed at Silvertown is now about 3,000, though this number is exceeded when large contracts are being carried out. The factory buildings at Silvertown are built in the most modern style, and are arranged in blocks devoted to the different manufactures. Electricity is used as an illuminant throughout the works. There are in use 40 boilers, and the coal consumption is over 1,000 tons. The factory is sub-divided into different departments which illustrate the scope of the business. The "Submarine" Department deals with telegraph cables, ship goods,

SILVERTOWN WORKS.

and gutta-percha submarine cores, shops being devoted to each manufacture. In the "Rubber" Department are situated the workshops devoted to solid rubber goods, waterproofing, ebonite, belting, hose, tyres for cycles and motor cars, and various sundries. The "Electrical" Department has extended its scope far beyond the original manufacture of rubber requisites and now embraces the construction of electrical generators, both of the primary battery pattern including the famous "Silvertown" cell, and dynamo-electric machines and electro-motors, also conducting wires and cables for the distribution of electricity to plant of all descriptions. In fact, this department deals with all apparatus necessary for the generation of electricity, its distribution and its utilization either as light or power, and the Silvertown Company are amongst the most noted manufacturers in this line, so far have the Company diverged from the r original business in rubber goods. The capacities of the "Electrical" Department may be gauged from the fact that there are employed two 250 H.-P. marine-type engines, each driving by ropes a continuous dynamo, and two 299 H.-P. "stand-by" direct coupled sets, also one 1,100 H.-P. engine and dynamo and four 500 H.-P. sets working at 150 lbs. pressure. These supply current, the equivalent of 14,000 eight C.-P. lamps and over 200 motors of from 1 to 150 H.-P. for driving the machinery in the Factory. The "General" Department holds the carpenters', fitters', smiths', tinsmiths' and plumbers' shops. The "Submarine" Department turns out all manner of cables, varying in weight from 1½ tons to 28 tons per nautical mile. Contrary to popular ideas on the subject, the lightest cables are for deep water and mid-sea laying, the greatest risk to the cables existing in shallow and inshore waters. The "Instrument" Department deals with all the lighter sort of electrical apparatus, including apparatus for automatic railway signalling, telegraphic instruments, testing sets, switchboards, and a host of other requisites upon which the electrical engineer depends. The Company have also a shop devoted to torpedo work and submarine mining for naval operations, and has supplied the leading Governments with accessories in this connection. The "Carbon and Battery" Department turns out the familiar batteries in use wherever electricity is required for small purposes, such as ringing bells. The Leclanche Cell, originally introduced some forty years ago by the Silvertown Company, is still produced in enormous quantities, having never been surpassed for convenience and power. In the 'India Rubber" Department, the crude rubber is worked up, by processes which are highly specialised, into the finished article. Here all the operations of washing, mixing, vulcanising, and calendering are carried out. The rubber is hardened and rendered commercially available by admixture with the proper "pigments," according to the purpose for which it is intended. The Company have also large works at Persan, in France, where 800 hands are permanently employed, and which are a replica, on a smaller scale, of the Silvertown works. They do a vast trade with India where their goods are appreciated as being of such high quality as to withstand the tropical climate to perfection. They have offices at Calcutta at No. 1-1, Fairlie Place, where large stocks of all their manufactures are kept. The Company also possess agencies at Melbourne, Sydney, Perth, and Brisbane (Australia), Buenos Ayres, Durban, and Johannesburg, besides having representatives all over the world.

The late SETH GOORDHANDAS SOONDERDAS MULJI JAITHA, grandson of Mr. Mulji Jaitha, founder of the firm of Mulji Jaitha & Co., was born on the 14th December 1884, and died 10th October 1902. Mr. Goordhandas Soonderdas came of a family of the Bhatia community, well known for their commercial spirit and enterprise. His education was confined to the ordinary school course and he did not aspire to college honours. He had the misfortune to lose both his father and mother at an early age and was brought up by his stepmother, under the care of his grand-father, Mr. Mulji Jaitha. During his minority the affairs of the firm were managed by Mr. Valubhdas Valji, a partner closely connected with the family. Mr. Valubhdas died in 1888 and Mr. Dharamsey, elder brother of Mr. Goordhandas, assumed charge of the firm until his death in 1899. Mr. Goordhandas, then but 25 years of age, took over the management of the firm; a very great responsibility at his early age, for Messrs. Mulji Jaitha & Co.'s affairs were of great magnitude and immense extent. In this task he acted with great judgment and discretion. Being a man of energy, he did not shrink from taking up, when it was offered to him, the onerous and responsible position of Secretary, Treasurer, and



The late Mr. G. S. M. JAITHA.

Manager of the Halai Mahajan, in addition to the management of his firm's business. This appointment is the highest honour in the gift of the Bhatia community. At the time of Mr. Goordhandas' appointment, the affairs of the community were very troubled. Many social questions of vital interest were under discussion. The three principal matters were—Travel to foreign countries; intermarriages with Hardwar people; and widow remarriage. On these points the community were at variance. Mr. Goordhandas found himself called on to deal with a blindly orthodox party on the one hand, and an excitable reform party on the other. By his force of charac-

ter Mr. Goordhandas succeeded in obtaining the assent of the community to certain measures which were decided innovations on the customs of a socially backward community, such as the Bhatias. He obtained the appointment of commissions and committees, formed of both orthodox and reform elements, to discuss and investigate the affairs of the community. But his death at the early age of 28 years frustrated his endeavours to adjust the differences of his community. This untoward event threw the Bhatia community into confusion once more, and no other member has ventured to fill the vacancy. So that the death of Mr. Goordhandas has proved a loss to his community no less than to his relations and friends.

The JAPAN COTTON SPINNERS' ASSOCIATOIN, Navsari Building, Hornby Road, Fort, Bombay. Established in India in the year 1895. Head Office, Osaka. Established, 1882. President, Mr. J. Yamanobe. This Association has been organized by the Cotton Spinners in Japan to preserve and maintain their homogeneous interest by avoiding all internal misunderstandings. In 1882 it was presided over by Mr. R. Okada, Director of Aichi Cotton Spinnery. In eight years it gained a vast experience, and adapted itself to the growing circumstances, and ultimately it was thought prudent to admit the cotton and yarn merchants, so as to have complete control over the cotton trade with its different branches. The Committee of the Association negotiated with the Director, Japan Mail Lines, to transport the Bombay cotton to Japan on behalf of themselves. At the same time all the Cotton Merchants in Japan were influenced so as to form a union to act at the guidance of the Association for furtherance of trade. The late Mr. Jamshedjee N. Tata, of Messrs. Tata & Sons, rendered meritorious service to this Association, by assisting the Nipon Yusen Kaisha Co. in transporting cotton to Japan in competition with the P. & O. Co., who had, up to that time, monopolized the shipping business. In 1895 it was resolved to send an agent to Bombay to watch the interests of the Association. Mr. T. Washida was the first. In 1896 The N. Y. Kaisha Shipping Company joined hands with the P. & O., the Austrian Lloyds S. N. Company and the Florio Rubattino S. N. Company. Now the shipping of cotton to Japan is done on an improved plan decidedly advantageous to the Japan cotton trade. Mr. K. Z. Ando, Agent in Bombay, was born in 1879. He was educated in Japan and after finishing his education he joined the Japan Cotton Association, arriving in India in the year 1904 as Agent.

Messrs. JAVERI & Co., Engineers, Machinery Agents, and Mill Furnishers, Bombay and Ahmedabad. The firm was founded in 1898 and is now composed of Messrs. B. N. Javeri, J. N. Javeri, M. M. Bhatta and N. N. Shah. Mr. B. N. Javeri alone carried on the business until he admitted his brother, Mr. J. N. Javeri in 1904. In the year 1906, to meet their extended business, they admitted Messrs. M. M. Bhatta, Engineer and Electrician, late of the New Great Eastern Mills, and N. N. Shah, as partners. They are sole representatives for—Messrs. Lupton & Place, Ld., Dobby Makers, Burnley; Messrs. Willan & Mills, Loom Makers, Blackburn; Messrs. Samuel Walker & Sons, Calender Makers, Radcliffe; The Oldham Boiler Works, Oldham; J. Casartelli & Sons, Manufacturers of Engineering Instruments, Manchester; The Sprinkler Co., Ld., Manufacturers of the Morris Sprinklers, London; Messrs. Lonsdale Bros., Manufacturers of Non-Conducting Boiler Covering Cement, Blackburn; J. Fairburn, Maker of Patent Split Motions, Burnley.

Their godowns are situated near the J. J. Hospital, where they carry a considerable stock of Machinery and Mill stores, besides having a good supply on their premises in the Fort. The firm's telegraphic address is "Climax," Bombay. Telephone No. 327.

They are also Agents for the Standard Electric Co., in which they carry out all electric lighting and power installations, and also represent Messrs. J. & H. Holmes & Co., Newcastle-on-Tyne, Manufacturers of Electric Machinery.

The Branch at Ahmedabad is located at Sugar Bazar, where a considerable stock of mill stores is kept to meet the immediate wants of the many mills of that growing city.

Messrs. A. JOHN & CO., Agra. The foundations of this thriving business were laid by Anthony John, a Greek gentleman who came to India from the Levant in the year 1801. Anthony John was a merchant who made a speciality of diamond dealing, and carried on a large and successful business until the time of his death. The business was carried on at various centres in the North of India, the headquarters being located at Agra. In those days, however, Agra was more a centre of historic interest than a place of commercial enterprise. This, however, has now been changed by the splendid energies of the successors of the founder of

Mr. GEORGE A. JOHN.

the firm, notably the present head of the firm, Sir Edwin John. When Anthony John died, he left three sons, the second of whom, Nicholas Anthony John, carried on the business of the firm. Mr. N. A. John had a long and successful career as a merchant, and in his hands the affairs of Messrs. A. John & Co. flourished. Up to the time of his death, which occurred in 1891, the firm had not gone largely into the mill business, of which they were subsequently destined to make such a success. Mr. Nicholas Anthony John, at the time of his death, left nine children and to them, in partnership, the business

descended. Sir Edwin John and his brothers took over the management of the firm, but with the consent of his brothers Sir Edwin John takes the position of senior partner and head of the firm. Sir Edwin John descried the possibilities of Agra as an industrial centre, and this eventually led to the great development of the resources of the city and the surrounding country. The actual beginnings of the development were due to others, but it remained for Sir Edwin John and the firm of Messrs. John & Co. to carry the movement to success. Prior to the year 1887, there were no modern industries located at Agra, and memories of the past, and the historic monuments for which the city is famous, alone contributed to its hold on the world's attention. From having been a centre of government under the Moghul

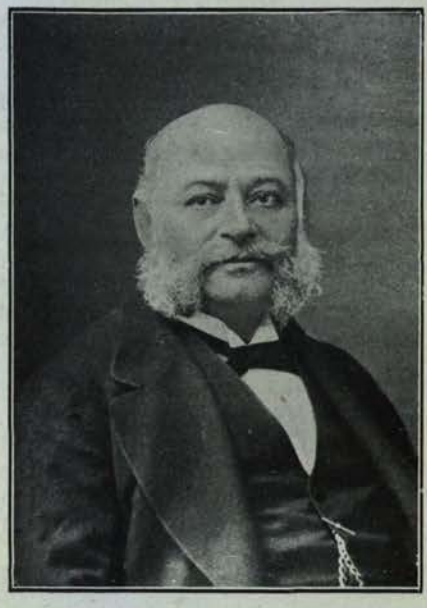
Sir EDWIN JOHN, K.S.G.

Emperors of India, the city and district had drifted into a backwater, and with the passing away of the old Empire their importance had vanished. On the face of it, the locality did not seem favourable to such enterprises as those which have subsequently revived its importance. Still, it was the centre of a fertile area, and the cultivation of cotton had been undertaken in the surrounding lands with ever-increasing success. A syndicate undertook the erection of mills in the vicinity, for the purpose of working up the raw material which was so plentifully grown in the neighbourhood.

Thus, the Agra Spinning and Weaving Mills came into existence, about the year 1887. It seemed at first, however, as though the stagnation of the locality was too complete to be stirred by modern

Messrs. A. JOHN & CO., AGRA.

enterprise. The pioneers of the industrial movement were unfortunate, and after languishing for a few years the Agra Spinning and Weaving Mills very nearly went into liquidation in 1890. It was at this critical period that Messrs. A. John & Co., with Sir Edwin John at their head, devoted their attention to the enterprise, and by business ability, foresight, and energy, changed what looked very like failure into conspicuous success. This was all the more a remarkable achievement as up to this time Sir Edwin John's energies had been directed to quite other channels of business, and he had no experience whatever of the textile industry. Of cotton, he admits that prior to this time he had no knowledge. But trusting to the intuition of a sound business man, Sir Edwin launched his firm into the new business with confidence, and as Messrs. A. John & Co., 1890, took over the affairs of the Agra Spinning and Weaving Mills, and in so doing, laid the foundation of the commercial importance of the district. The business of the mill has prospered under the new management, and this pioneer of the mill industry at Agra, still under the same man-



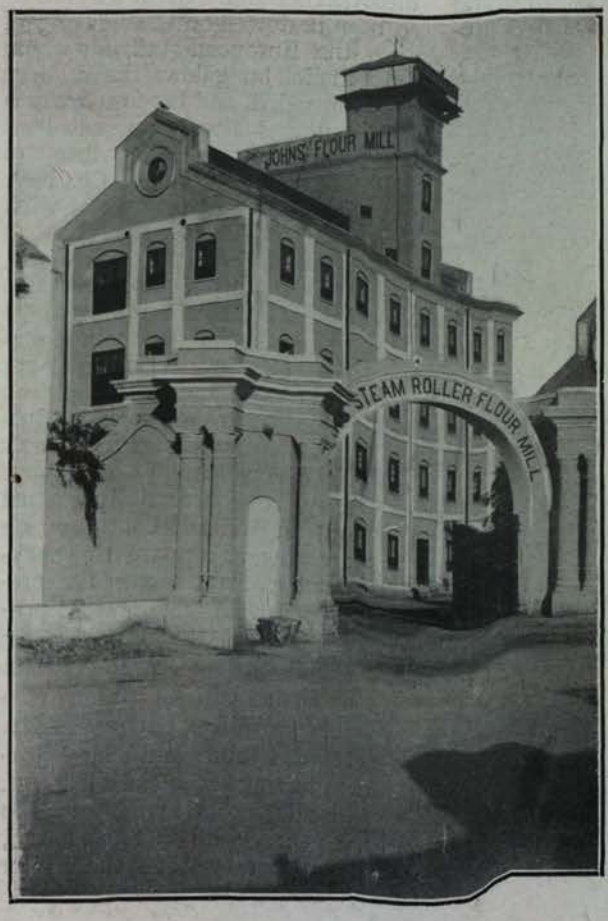
Late NICHOLAS ANTHONY JOHN.

Mr. A. ULYSSES JOHN.

A. JOHN & CO., AGRA.

A portion of the workmen's quarters.

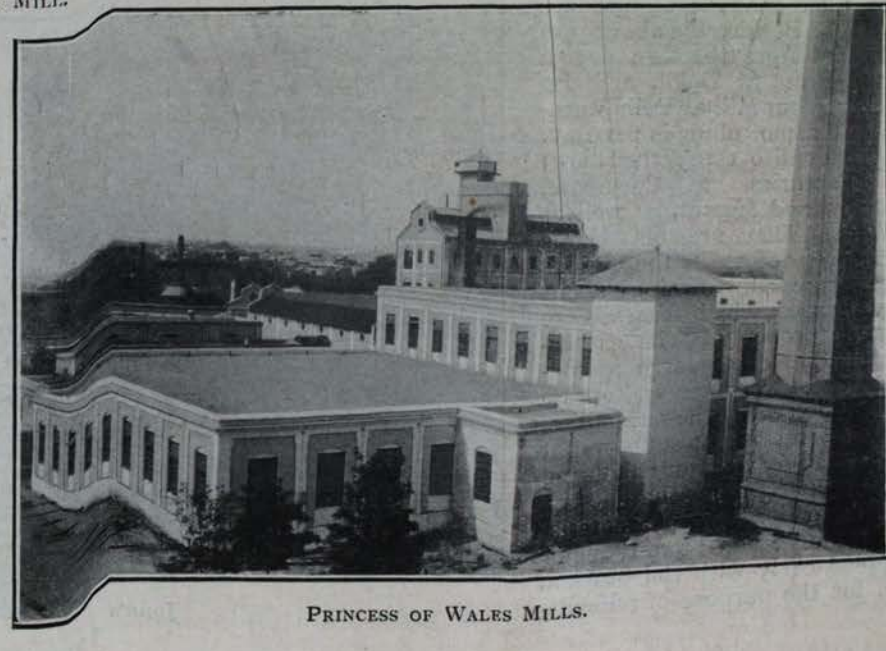
agement, continues its successful career to this day; but the works have been transformed. At present



JOHN'S ROLLER FLOUR MILL.

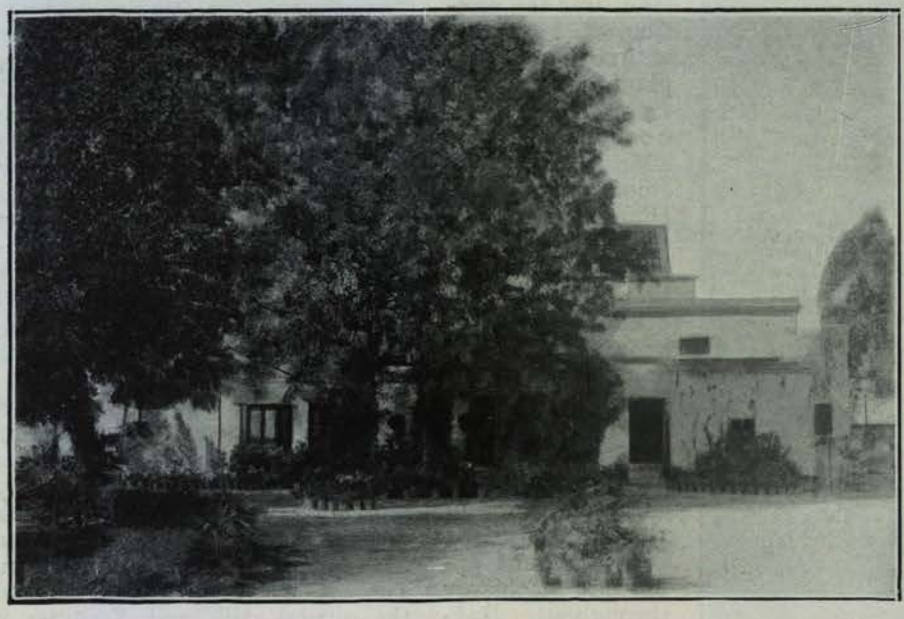
the Agra Spinning and Weaving Mill contains 14,000 spindles, and is fitted throughout with thoroughly modern and up-to-date machinery, the opportunity for completely renovating and modernizing the machinery and fittings having been afforded by a fire which destroyed the old machinery in the year 1900. The success of this venture convinced the firm of A. John & Co. of the possibilities in the new enterprise, and therewith arose the design of extending their enterprise in this direction. The firm acquired an excellent piece of land, about eighty acres in extent, on the banks of the river, and upon these premises they commenced to build a collection of the finest factories in India, which have now rendered Agra distinctive as an industrial centre. The first step Messrs. A. John & Co. took, after acquiring the Agra Spinning and Weaving Mills and purchasing the above-mentioned land, was the erection of a factory with the necessary plant for the manufacture of ice, a commodity of which the town stood much in need. Having carried this through, they again turned their attention to textiles, and erected a mill known as John's Spinning Mill. This factory was inaugurated in the year 1896, and the building is furnished with a plant of 18,000 spindles with the most approved machinery throughout. Having established this factory, the firm built a Ginning Factory, with a capacity of 80 double and 70 single *quis* and an hydraulic press. The Coronation Spinning and Weaving Mill, a very fine factory of 12,000 spindles, and modern machinery of the very best and latest pattern, was the next enterprise, to which Messrs. A. John & Co. devoted themselves. This was inaugurated, with great ceremony, in the year 1903, Sir J. J. Digges LaTouche, Lieutenant-Governor of the United Provinces, consenting to open the mill when ready for working. The firm have recently started a new spinning mill, known as the Princess of Wales Mill. This concern is on a much extended scale, and is furnished with 25,000 spindles. The foundation-stone of this mill was laid by His Grace Dr. Charles Gentili, Archbishop of Agra, and it was opened in 1907.

These factories constitute a remarkable group, and are a standing advertisement to the great business capacity and administrative ability of the firm of Messrs. A. John & Co., controlled by Sir Edwin John who is the master spirit of the concern. The estate on which are situated the several mills and factories is laid out with extraordinary care and is practically a garden, with green lawns and shaded walks, flower beds, etc. The whole is kept up in the best style, and no traces of the manufactures which are carried on at the mills is observable in the trimly kept expanse.



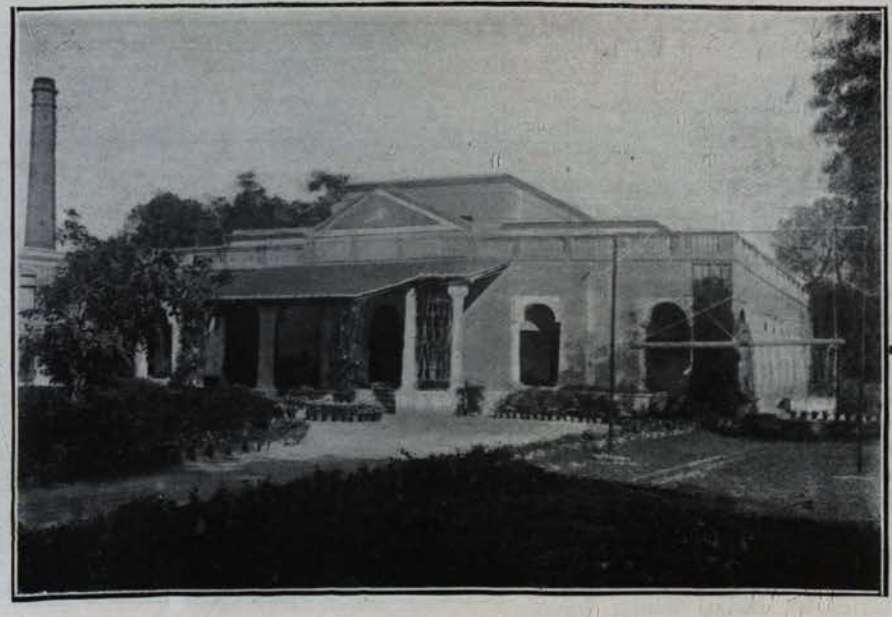
PRINCESS OF WALES MILLS.

There are over 3,000 hands employed at the mills whose work is supervised by 30 Europeans. The output of the mills is between 80 and 90 bales of 500 lbs. per day.



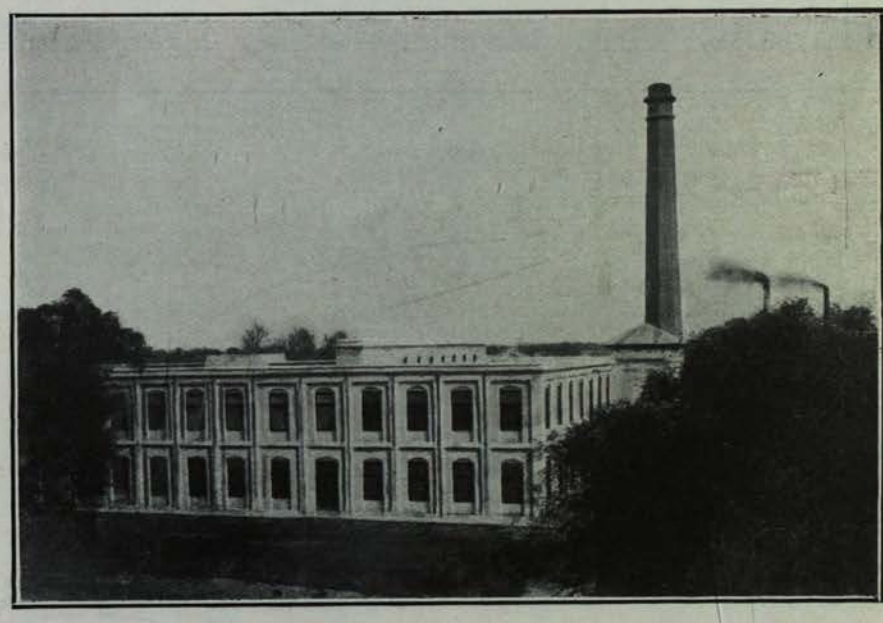
CANTONMENTS, AGRA.
Residence of the late Mr. Anthony John.

The Ginning Factory deals with about 2,000 maunds of raw cotton per day and the Ice Factory has an output of 20 tons daily. In addition to the above, Messrs. A. John & Co. have established a Flour Mill with a capacity of some 1,200 maunds of produce per day. Besides the above properties at Agra the firm own a Cotton Press at Delhi, and also another Flour Mill at Delhi, turning out 2,400 maunds per day. They have also established large Ice Factories at Cawnpore, Lucknow and Meerut, as well as at Agra. They are also large house proprietors in the various places named, owning about forty houses, which form a very valuable property. The gathering together of so large a congregation of workmen and operatives, who, with their families, number some 10,000 souls, might have created a serious housing question at Agra but that Messrs. A. John & Co., with characteristic energy and fore-thought, grappled early with the problem and, for the purpose of relieving congestion, built a model village for their workfolk and families. This village is an example of cleanliness and comfort. It is laid out in broad well-kept streets flanked by substantially built huts, fitted with an abundant supply of water and every sanitary convenience. Shade trees are plentifully planted throughout the village, which is most picturesque, devoid of dirt or squalor, and forms a fine example of what can be done in this direction in India. Great care has also been bestowed on the housing of the European staff, for whom model bungalows have been provided, and the firm are now building them an excellent club house. The firm of Messrs. A. John & Co. have indeed set an example of what can be done on the lines of modern enterprise in India, which is worthy of imitation by capitalists interested in the industrial development of the country. Lifting Agra from its stagnant condition into a centre of life and industry, they have shown the way in which similar enterprise may be successfully carried out in Indian localities which are now as apparently backward as Agra was in the pre-John times. The present proprietors of the firm are Sir Edwin John, George A. John and A. Ulysses John, who are working partners, Mr. H. C. John and Mrs. Jordanidis having financial interest. The land consisting of 80 acres, nearly all freehold, is the property of the John family.

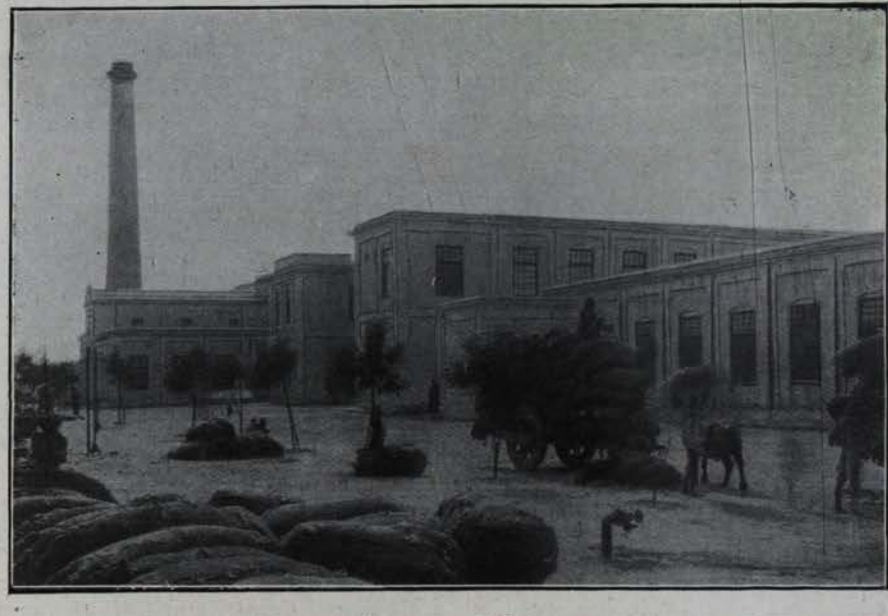


JOHN'S JATNIE KOTEE.

A. JOHN & CO., AGRA.



JOHN'S CORONATION MILL.



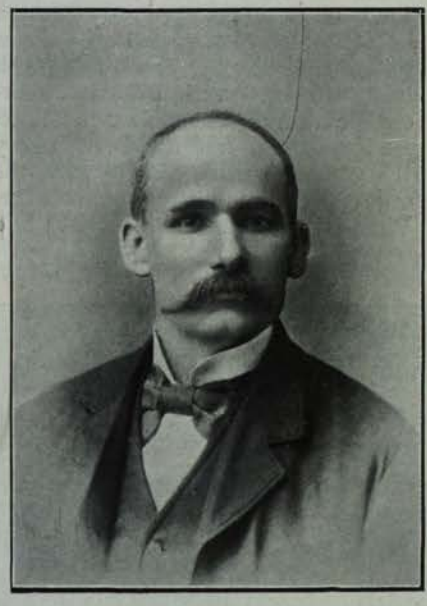
CORONATION MILLS.

Sir EDWIN JOHN, son of the late N. A. John and grandson of Anthony John, founder of the firm of A. John & Co., a Greek gentleman who came to India in the year 1801. Anthony John was a diamond merchant, but after his arrival in India he entered the British Military Forces. He was the first man to enter Bhurtpore under the British command, for which service he received a medal. Anthony John subsequently started in business as a general merchant, but made a speciality of diamond dealing. He had three sons, of whom the second, Nicholas Anthony John, carried on the business after the death of his father. The business was carried on at various centres in the North of India, the head-quarters being at Agra. Mr. N. A. John saw service in the Artillery during the Indian Mutiny of 1857. He died at Mussoorie in the year 1891 leaving nine children. His remains were interred in the Catholic Cathedral, Agra, and a high altar was presented to the Cathedral by the family in his memory. The subject of the present sketch, son of the above, was born in the year 1859 and went to England for his education, which he received at Stoneyhurst College, Lancashire. He returned to India in September 1875 and entered his father's firm. On the death of Mr. N. A. John in 1891, the business descended to the family in partnership, and Sir Edwin John took over the management as senior partner.

Sir Edwin John has devoted considerable time to public service. He has carried on famine work under Government and was Secretary and Treasurer during two famines in the time of Sir Antony MacDonnell. He has served as a Municipal Commissioner and a Magistrate, and on local committees in Agra. He was a member of the Municipal Council for 14 years and an Honorary Magistrate as well. These positions he had to resign, owing to pressure of private business connected with the growing firm of John & Co. Ecclesiastical affairs have demanded a great deal of his attention, and his firm contributed an altar to the Cathedral in commemoration of their brother and sister, who are buried there, and have also presented many decorations to the same edifice. He has twice visited Rome, and has been granted an audience by the Pope to whom he owes his Knighthood. His residence in London, where he retires every year, is his mansion at 151, Gloucester Terrace, Hyde Park, Lancaster Gate. Sir Edwin John's firm recently offered Agra a free hospital at a cost of Rs. 50,000, but this offer was declined by the Government. Sir Edwin, however, intends to bestow this gift on the city, as a private matter, as soon as he can secure the necessary law. Sir Edwin's career has been a splendid example of what can be accomplished by energy and business capacity, combined with a genius for affairs. The modern industrial development of the City of Agra has been practically his work as he is the moving spirit of the great firm of Messrs. A. John & Co., which has lifted Agra out of mediævalism to its present prominent position as an industrial and mercantile centre.

ALTAR IN AGRA CATHEDRAL
to the memory of the late N. A. John.

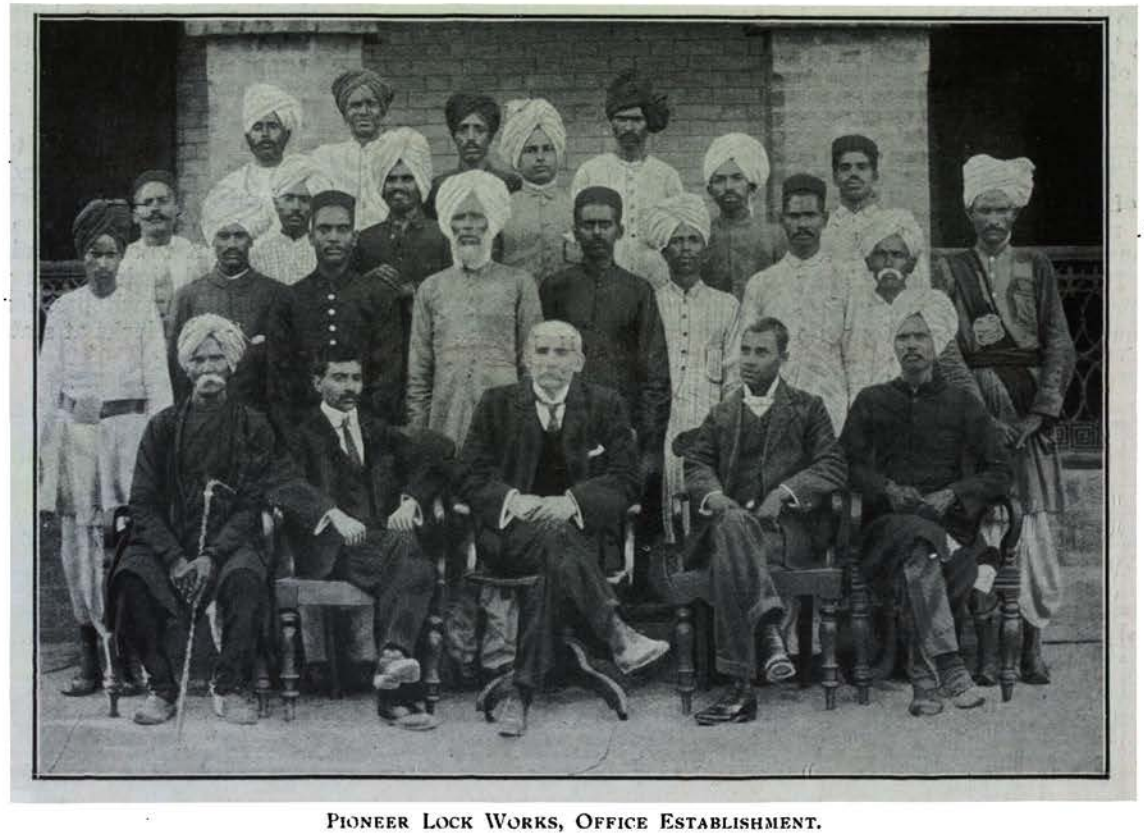
Messrs. J. H. JOHNSON & Co., Proprietors, the Pioneer Lock Works and General Metal Foundry, Aligarh. This well-known concern was founded in 1885 by the sole proprietor, Mr. J. H. Johnson. The business of the firm is principally directed to the manufacture of locks, military badges, buttons, castings, and general hardware. They are Government contractors to the Military Department for the supply of buttons and all descriptions of metal military fittings all over India. Their prices for work of the highest quality being reasonable, they have found no difficulty in obtaining and holding these contracts to the satisfaction of Government. They do a large business in castings, etc., with private firms and railways, outside the Government contracts. Messrs. J. H. Johnson & Co. also represent some of the best English and French makers of motor cars, and they have sole agencies for the United Provinces for these. They are experts in motors and undertake repairs of all descriptions, no matter how intricate. They also import largely those descriptions of tools and hardware which cannot be successfully manufactured in India. The firm is about to set up a modern plant for the manufacture of watering and other carts, patent night-soil removers, and tip-carts for municipalities, etc. They hold a very high reputation for the manufacture of locks of all descriptions, and in this line they run several exclusive patents. They were the first to introduce the galvanising of metals into India, and possess the largest patent plant for galvano-plastic work, carrying on electro-plating work in gold, silver, nickel, copper, etc. They are the only firm in the East possessing a button-making plant, and most of the articles supplied to the Military Departments and Volunteer Corps are machine-stamped from special dies. Hence they are able to compete with any of the home and Continental manufacturers. Messrs. J. H. Johnson & Co. have also laid themselves out to supply railway requisites, and their patent point-locks for railway switches, for securing facing-point locks at stations where



Mr. J. H. JOHNSON

PIONEER LOCK WORKS.

mail trains run through, are largely in favour and are used on all the railways in India. Several Continental railways have also adopted them. They lay themselves out to fill almost any indent in the manufactured metal line. They also possess a large timber yard for the supply of all descriptions of wooden structural work. The firm employs about 420 hands, under the personal supervision of Mr. Johnson, the proprietor, and European foremen. Messrs. J. H. Johnson & Co. are represented in Madras by their agents, Messrs. Ramsay & Co.; in Bombay by Messrs. Patrick & Co.; and they have further agencies at Sydney (Australia), Hong-Kong and Natal (South Africa). They import motor cars and own a garage for letting out cars on hire.

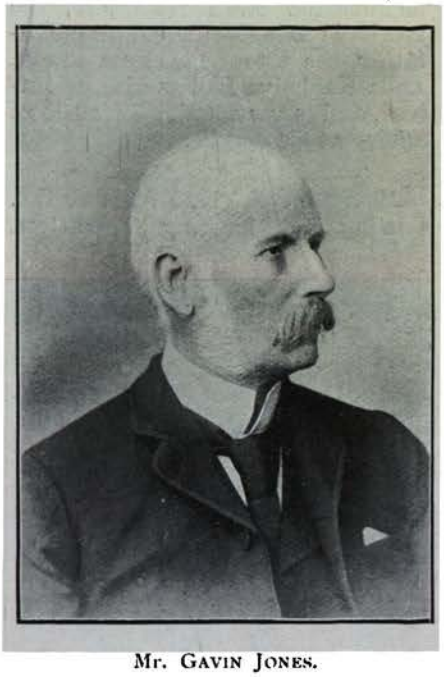


PIONEER LOCK WORKS, OFFICE ESTABLISHMENT.

Mr. JOSEPH HENRY JOHNSON, sole proprietor, J. H. Johnson & Co., Pioneer Lock Works, was born in 1858 in Yorkshire, England, and educated privately in the same county. He was placed as an apprentice with Messrs. Jessop & Co., of Sheffield, and after serving his indentures he travelled in various parts of the world till he came to India in 1878. For a time he was engaged in the tea industry; he also served on various railways and in the Telegraph Department, and was in mercantile employment for a time. He has turned his hand to many things in his time, always with the object of acquiring knowledge. With the same object he had travelled a great deal. He revisited England, and on his return to India in 1885, at the suggestion of certain military officers, he established his present firm and business, which he has carried on with great success, ever since.

Mr. GAVIN JONES, Cawnpore. This well-known gentleman, to whom such great industries as the Elgin Mills and Muir Mills owe their prosperity, is an Indian veteran who has had a most eventful and distinguished career. He was born in the year 1835, his father being the owner of considerable property, indigo factories, etc., in the Jaunpur District, U. P. Mr. Jones early showed tendencies towards an engineering career, and was educated with a view to entering the profession of a Civil Engineer. An untoward circumstance, however, interfered at first with this design. His father was a heavy loser by the failure of the Union Bank at Calcutta, and shortly afterwards died. Mr. Jones then entered into business with his brother, who was proprietor of an Indigo Factory in the Farukhabad District, and left Calcutta to reside at Fatehgarh. This was in 1856. A year after came the outbreak of the Indian Mutiny. The Fort of Fatehgarh was besieged by the mutineers, and of the defenders only Mr. Gavin Jones and one other escaped with their lives. In this siege he lost his brother who was one of the garrison. Mr. Jones succeeded in reaching Cawnpore in company with Messrs. Edwards

and Probyn of the Civil Service, fugitives from Oudh. He subsequently did good service in the suppression of the rebellion. On the relief of Lucknow by Sir Colin Campbell, he joined the Field Force in the advance on Fatehgarh, and had the honour of being mentioned in despatches to the Home Government, by Lord Canning. For his services, Mr. Gavin Jones received the Mutiny Medal. At the close of the Mutiny, his brother's home being broken up, Mr. Gavin Jones abandoned indigo and commerce, and followed the original bent of his mind. He joined Messrs. Norris & Waller in 1862, as Engineer, in their contract for the construction of a section of the Great Indian Peninsula Railway, between Jubbulpore and Hoshangabad. Here he unfortunately contracted malaria, and was forced to leave India for a while. He went to England to recruit his health, and while at home took service as an engineer in the construction of a branch of the Great Eastern Railway. Meanwhile the Elgin Mills Company at Cawnpore had been floated and was in need of the services of an efficient Engineer in the construction of the Mill, and while in London in 1865 Mr. Jones received from the Chairman of the Elgin Mills Co. an offer to come out for the erection and management of the Mills. Mr. Jones accepted, but did not remain long with the Company. Some years afterwards, however, when the Company went into liquidation, Mr. Jones again took over the management for the syndicate who had purchased the concern. His management was a great success, as set forth in the account of the Elgin Mills given in another part of this publication. After a few years Mr. Jones left the Elgin Mills and started the Muir Mills which is still a strong going concern, and again, later, started the Cawnpore Woollen Mills. The latter Company has proved a splendid success, and has proved a valuable aid to the Government of India in equipping the Indian Army with requirements previously only obtainable from England. Another enterprise, which owes its inception to Mr. Gavin Jones, is Cooper, Allen & Co.'s Boot Factory at Cawnpore. He designed and built the tannery and works. This concern has also been eminently successful, now giving employment to thousands of native hands and large staff of Europeans. In 1887 Mr. Gavin Jones retired from India and went home, but the East called him back, and in 1896 he returned to found the Empire Engineering Works, a successful and steadily growing concern now managed by his son. The development of Cawnpore into the large industrial centre which it has become, is largely the work of Mr. Gavin Jones, than whom the British in India have had no more valuable citizen. There is hardly a factory in Cawnpore that is not in some way, directly or indirectly,



Mr. GAVIN JONES.

the offspring of his brain. The natives in the town and environs owe him an incalculable debt for teaching them to utilize their labour on the most approved European lines, and the Government is deeply indebted to him for turning Cawnpore, the town of sad memories, into one of the most valuable assets of the Indian Empire.

K. L. KABASI, B.A., of Messrs. Shawoo and Kabasi, Daisi Jute Merchants of Tala, Calcutta, and proprietor of the Swadeshi Cigarette Manufacturing Company, Bengal, comes of one of the oldest families of Jadurhati, Sub-division Basirhat. He is closely related to the Shawoos and Ballavs, zemindars of Basirhat and millionaires of Sham Bazar. His great grandfather was Dr. Lalchand Kabasi, an eminent Bengali physician, whose reputation is remembered to the present day. Mr. Kabasi had the misfortune to lose both his parents while still young, and he had to rely entirely on his own efforts to obtain an education. Despite these adverse circumstances, rendered more difficult by ill-health, he graduated from the Duff College, Calcutta, in the year 1897. His inclinations tended towards independent commercial pursuits rather than to Government service or the law; and having studied science in its practical aspect, he devoted his time to commercial chemistry, and discovered a cheap and effective process of manufacturing cigarettes from Indian tobacco. With a view to starting a cigarette manufactory at Calcutta, Mr. Kabasi travelled through the tobacco producing districts of India. In 1900, he commenced manufacture, but at the outset was unfortunate, as his factory and stock were swept away by a heavy flood. This caused him to desist from his efforts to establish the industry for a while, and he accepted a post as head master in the Kanchantola H. E. School, near Pakur, where he stayed for a year. He then took up the head mastership of the Dhankuria H. E. School, and was appointed a sub-inspector of schools, in the 24-Parganas in 1903. His natural bent towards commerce, however, led him to abandon this post when the Swadeshi agitation seemed to offer an opportunity to local manufactures, and he established the Swadeshi Cigarette Company, equipping the factory with automatic machinery for manufacturing cigarettes in quantities; the whole process of manufacture being carried out by local labour.

Messrs. KAHN & KAHN, Merchants, Calcutta. This firm is a branch of the long-established business house of the same name, which was originally founded as Harrison and Kahn in the year 1864. In 1887, the style was altered to that by which it is now known, Kahn &

Kahn. The Calcutta branch is the latest to be opened, having been established in the year 1901 under the joint management of Messrs. Walter Lomax and Robert Bayley. The firm has been established in Bombay since the year 1889, and is under the present management of Mr. Percy Clare, in succession to Mr. O. St. Gour. There are other branches at Delhi and Amritsar and at Lyons (France). Messrs. Kahn & Kahn do a very extensive business in Chinese and Japanese piece-goods, which they export to the United Kingdom and the Continent of Europe. A considerable business is done with the United States, this connection being attended to by their Lyons House. The partners in the firm are, Messrs. Herbert Ernest Kahn, O. S. Darner Kahn, E. Philippi, and Max Adler.

Lalla KANHAIYA LALL, Rai Bahadur, Banker, Cawnpore, was born at Cawnpore in 1871, and educated at the High School, Cawnpore. After passing out of school he entered the service of Government, joining the Treasury Department. His abilities secured him promotion in

Lalla Kanhaiya Lall.

this department, and he was in time promoted to the position of Government Treasurer, which he has held ever since. Lalla Kanhaiya Lall has interested himself in public affairs, and in the year 1897 became a member of the Municipal Council of Cawnpore. He was appointed Vice-Chairman of the same Municipality in 1898, which post he has filled continuously ever since. He received the additional honour of appointment as Honorary Magistrate in 1899. He is also a member of the Executive Committee of the Dufferin Hospital and also of the Hindu Orphanage, and is a member of the Sri Ramlalla Committee. In private life, he is a large landowner and the proprietor of several zemindaries. He also carries on a banking business, that of Messrs. Lalla Ram Ratan Ramgopal, Bankers, which he inherited from his father, the late Lalla Sidh Gopal, and his grandfather, the late Lalla Ram Ratan. Lalla Kanhaiya Lall is also a Durbari, and is very active in all local affairs at Cawnpore.

Messrs. J. F. KARAKA & Co., Coaling and Landing Contractors,

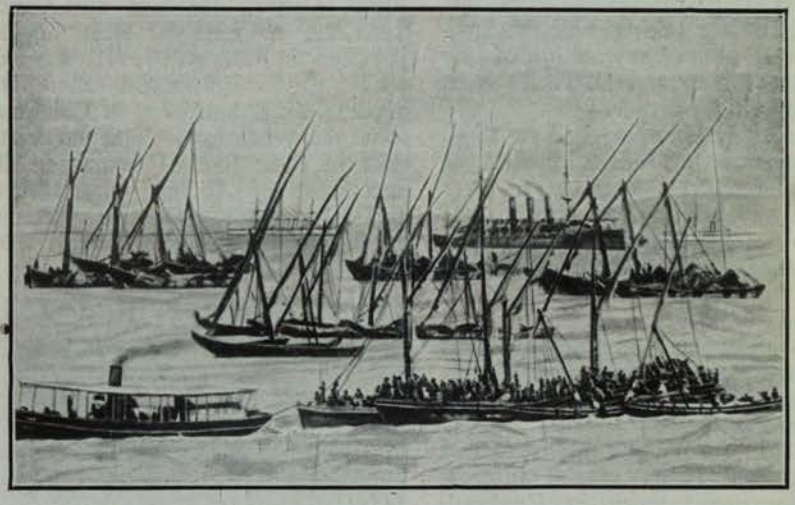
Mr. J. F. Karaka.

Sirdar's Palace, Bombay. Partners, J. F. Karaka and B. F. Karaka, sons of Fardunji Framji Karaka, Justice of the Peace of the City of Bombay, a Parsee gentleman of a very well known family, who started the business in the year 1876 as a coal broker. Being well connected with those who were in the coal trade from the time English and Welsh coal made their appearance in Bombay, Mr. Fardunji attained prominence from the very commencement, and soon became

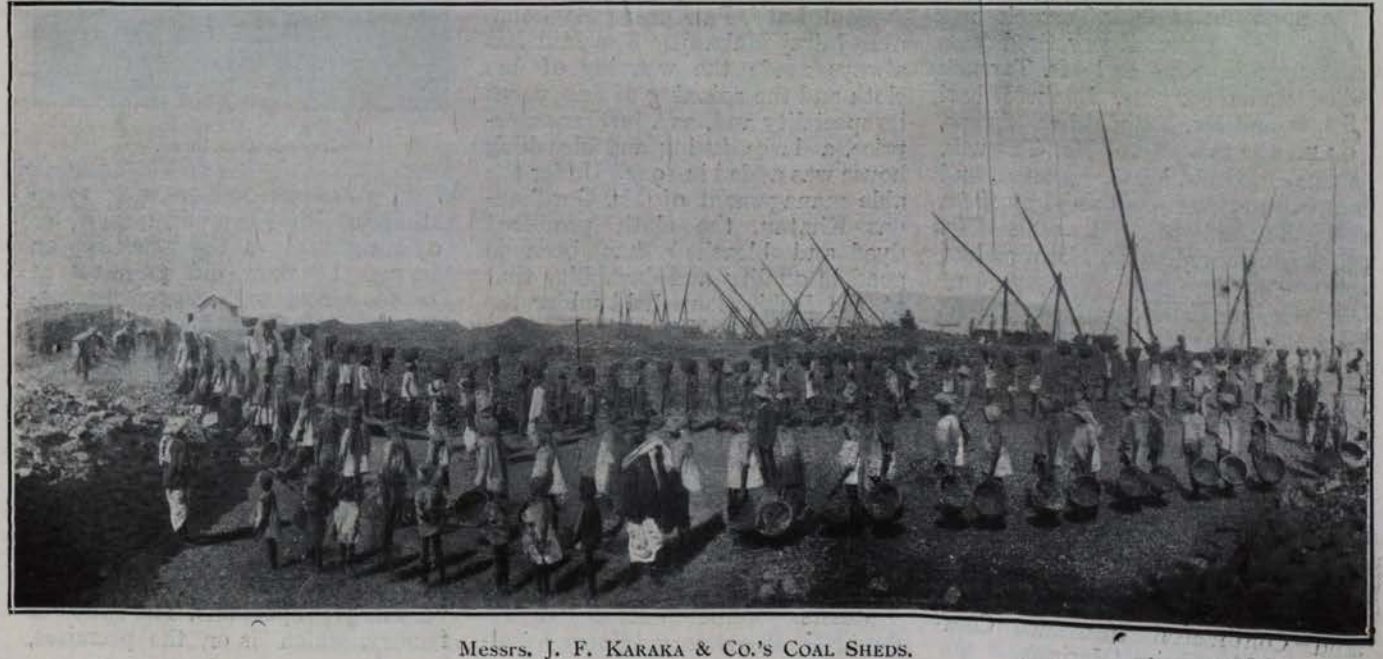
Mr. B. F. Karaka.

the leading coal broker, a position he has maintained ever since. The firm is now known by the title of Fardunji Framji & Sons. The consumption of coal in 1876 was comparatively small in Bombay and of very little significance in the outlying districts of Bombay. The only large users of English and Welsh coal then were the two railways, *viz.*, G. I. P. and B.-B. & C. I. Only a few cotton mills existed at the time, and the demand from these for coal was not very considerable. These railways did not then cover so extensive an area as they do at present, and many locomotives on the line burned firewood, and the same fuel was used in connection with other industries in the districts. The demand from the ships visiting the port was also very small, and the whole of the trade of the port was carried on by sailing vessels. Although the coal trade of Bombay then was narrowed down within such a small compass, yet with the industrious efforts of Mr. Fardunji, coal took its proper place as one of the most important factors in the trade of the port, as merchants were

induced to ship coal to a large extent as a freight item on the outward voyage from Great Britain and elsewhere, and load with exports of all kinds, such as grain, cotton, etc., on their return voyage. Speculation at that time in English coal was rampant, on account of deliveries being made at very distant dates from the time that the contract was entered into. The importation of Bengal coal from Calcutta having replaced English coal, speculation soon disappeared and naturally caused a great reduction in the earnings of brokers. Mr. J. F. Karaka was not slow to grasp the situation, and about six years ago in connection with his brother, in addition to continuing the work of coal brokers, they began to work as Coaling and Landing Contractors. As brokers they had already introduced the different varieties of English and Welsh coal, and in the last decade of the 19th century, when Bengal coal was first brought to the Bombay market, the firm was foremost in introducing it with great success to consumers, as they had the advantage of having well established connections in this line. The result is that various descriptions of coal from the Bengal Collieries are at present reaping the fruits of the early and strenuous efforts of this firm. Although the firm's business as Coaling and Landing Contractors is of recent date, they have been able to secure for themselves a large amount of business. They handle coal for various steamships connected with the Mercantile Marine, and Government Services and the Bombay Port Trust; and hold contracts from the Municipality of Bombay and the Royal Navy. They hold all the coal imported in Bombay by Cory Bros., Ld., who are the richest and the largest coal contractors in the world. They possess sufficient lighters to carry coal to and from the bunders, but on being selected as the contractors to the Royal Navy (of which they are very proud), they built a further fleet of wood and iron lighters which are specially adapted to the requirements of fast coaling. They have two steam launches, one of which is considered a very powerful tug. The *Graphic* of London, while discussing their work, complimented them on the fact, that with such contractors "in case of emergency, Bombay may be depended upon to coal our biggest warships in about twelve hours." As Naval contractors they had



Messrs. J. F. Karaka & Co.'s Coaling Fleet.



Messrs. J. F. Karaka & Co.'s Coal Sheds.

the honour to coal the ships of the fleet which conveyed H. R. H. the Prince of Wales to India during the Royal Tour, and they found an opportunity to prove their mettle by coaling these ships in the fastest time ever established. One of the ships, H. M. S. *Terrible*, was coaled at an average of 153 tons per hour, which gained for the firm the first place on the record list. In certifying to the good work done, the Commander made the following statement :—"Had it not been that the work of trimming the coal into bunkers, towards the end, became so difficult, the men would have established a still higher record." Local newspapers, including the *Times of India*, and journals in England and Germany, thought the event of sufficient importance for favourable mention. The brothers Karaka are the nephews of the late Mr. Dossabhoy Framji Karaka, C.S.I., who enjoyed the trust and good grace of the Government.

Messrs. KERR, TARRUCK & Co. This firm was founded by Mr. Tarruck Chunder Sircar, a Bengali merchant, in conjunction with Mr. James Kerr and Mr. William Barlas Jameson, in February 1873, under the auspices of the celebrated calico-printers and Turkey-red dyers, Messrs. F. Steiner & Co. (now Ltd.), of Church near Accrington, whose agency in Calcutta had been under the management of Mr. Tarruck since 1855. Mr. James Kerr retired from the firm in 1875 and Mr. Tarruck died in 1888. Mr. Bepin Bihari Sircar and Mr. Nalin Bihari Sircar, C.I.E., the two sons of Mr. Tarruck, then joined Mr. W. B. Jameson, and the business was continued by them till the end of 1904, when Mr. Jameson retired. Mr. Nalin Behari also died in 1906. The present partners are Mr. Bepin Bihari Sircar and his son Mr. Birendra Nath Sircar.

The firm have a branch at Delhi, which was opened in 1894, and also sub-offices at Cawnpore and Amritsar. Their chief business is in imports of all kinds of piece-goods, metals, and sundry hardware. They are the agents of the Union Assurance Society of London (Fire), Sun Life Assurance Co., of Canada (Life), and Continental Insurance Company of Mannheim (Marine).

Messrs. D. T. KEYMER & Co., 5, Mangoe Lane, Engineers, Merchants and Shipping Agents.

This is the Calcutta branch of the old established firm of D. J. Keymer & Co., London.

In 1844 Mr. D. T. Keymer joined the business then known as R. C. LePage & Co., as a junior.

Mr. LePage retired in 1877, Mr. D. J. Keymer taking over the business. In 1882 he was joined by his eldest son, Mr. D. T. Keymer, as Managing Partner.

Mr. D. J. Keymer died in 1894. The business has been carried on at the same address since 1847.

The branch in Calcutta was opened in 1900 and holds various important agencies; amongst others, those for the Electric Construction Co., Ld, Wolverhampton, Caillet's Mono-rail and Miner's Safe Co., Ld., and is under charge of Mr. A. McDonald, well known in railway engineering circles.

Mr. D. T. Keymer has travelled widely and takes special interest in educational work in England.

The KHATAU MAKANJI SPINNING & WEAVING Co., Ltd., Bombay, was floated in 1874 as a Joint Stock Company, with a capital of ten lakhs of rupees. The original Directors were the Hon. Mr. Mahomedally Roggey and Messrs. Cursondas Vullabhdas, Dwarkadas Vussonji, Amroodin Abdool Latif, Pandurang Raghoba, and Jairaj Makanji. The Mill has always made the weaving of fine cloth and the spinning of fine yarns its speciality and, as a further enterprise, a large dyeing and bleaching house was added in 1902. Under the able management of Mr. Gordhandas Khatau, the cloth produced dyed and bleached has been so good in quality and durability that at the Exhibitions held under the auspices of the National Congress, as well as at the various Provincial Conferences, this Company has been awarded the Gold Medals. The present Board of Directors comprises Mr. Gordhandas Khatau (Chairman) and Messrs. Gordhandas Goculdas Tejpal, Mulraj Khatau, Dwarkadas Dharamsey, and Tricumdas Gordhandas.

Messrs. LABHCHAND MOTICHAND, Mookims and Court Jewellers, Marble House, 41, Dhurrumtollah Street, Calcutta. This flourishing business was started by Messrs. Labh Chand Sett, grandson of the late Kalumal Sett, an influential Indian merchant and well-known banker in the mercantile community of Calcutta of his time, and Moti Chand Nakhat, son of the late Phool Chand, Mookim and Court Jeweller, a famous and honest jeweller in Bengal, and one of the most influential members of the Jain Community of Calcutta, some ten years ago. The partners' skill in their line of business, the excellence of their manufacture, and the quality of the precious stones and jewellery in which they

LABHCHAND SETT.

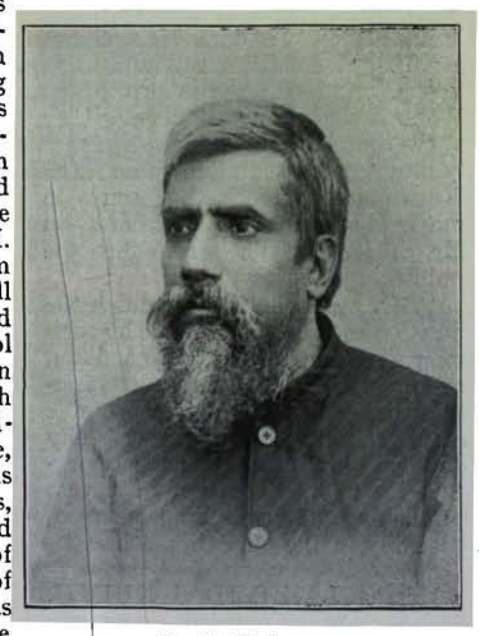
dealt, soon obtained a wide reputation for the new firm, and for some eight years they carried on business at their old premises at Cotton Street with increasing success. So much so, that it became necessary to secure larger premises in a more suitable locality. Accordingly the "Marble House," in Dhurrumtollah was built purposely for the accommodation of the firm, which has since carried on business at that centre. Since the establishment of these premises a further great impetus has been given to the firm's business, which has attained very large proportions. The spacious factory, which is on the premises,

and which has been brought thoroughly up-to-date with modern tools and appliances for the manufacture of jewellery and gold articles, has enabled the firm to improve even upon the excellent class of goods in which they previously dealt, and at present the manufactures of the firm are quite in the first rank. The firm gives employment to many first class artificers in the various branches of the goldsmith's and jeweller's art, and in all employs about 250 to 300 hands. The entire business is under the personal supervision of the partners, who are both highly experienced men in their trade. The firm makes a speciality of diamond cutting, and specimens of their work are always

MOTICHAND SETT.

on view at the Show Rooms, to which the ground floor of the building with an excellent frontage is devoted. The entire facing of the building is of marble and of unique and striking design in the city. Although the business of Messrs. Labhchand Moticland is carried on in quite first class surroundings, the prices of their jewellery, etc., are very moderate. This they are enabled to assure by the fact that they are manufacturing jewellers, and the public in dealing with them obtain their goods without middle profits. The firm made a very prominent exhibit at the Industrial Exhibition at Calcutta, 1906-7, where they erected a beautiful stall at their own expense, the walls, being lined with mirrors which set off the excellent exhibits with great effect. This exhibit was a very successful proof that Indian artisans can produce jewellery in the modern style in competition with European workmen. To this end Messrs. Labhchand Motichand have established a free Technical School with the object of teaching the better class of the Indian people the art of manufacturing jewellery suited to modern requirements in the European and Indian styles. This was practically a necessity to the business as the men who profess the art as a caste profession, are unreliable in the extreme, and the firm has experienced considerable inconvenience owing to the delays occasioned by their irregular attendance. At the exhibition the firm also exhibited diamond cutting machines and other appliances as used in diamond cutting. The process of diamond cutting was shown in practice at the firm's stall and excited much interest among the Indian visitors, specially to H. M. the Amir of Afghanistan, to whom the art was practically unknown till introduced by Messrs. Labhchand Motichand. The Technical School does not confine its instruction entirely to the jeweller's art, though this is its main purpose. The curriculum includes English literature, Sanskrit, Hindi and Bengali. It is open to all Jains and Hindu youths, and provision is made for board and lodging for a certain number of Jain young men. The munificence of Messrs. Labhchand Motichand has rendered the advantages of the school available, free to all classes whom they invite. Babu Motichand Nakhat, the junior partner, has also benefited Calcutta by the establishment of a large Dharmsala or traveller's house at No. 9, Shama Bai's Lane, Bara Bazar, in memory of his father the late Lalla Phoolchand, who was in his time Mookim and Court Jeweller to H. E. the Viceroy. These premises cost about Rs. 60,000 and are quite up to modern requirements in ventilation and sanitation. They are intended for the use of Jains and Hindus. Messrs. Labhchand Motichand have received the honour of appointment as Mookims and Court Jewellers to H. E. the Earl of Minto, the Viceroy, and have also been appointed Jewellers to H. H. the Nizam of Hyderabad, H. H. the Maharaja Gaekwar of Baroda, H. H. the Maharaja of Mysore, H. H. the Maharaja of Cashmere, H. H. the Maharaja of Cooch Behar, Raja Sir Amar Singh, Commander-in-Chief of Cashmere, and H. H. the Maharaja of Benares, and are patronized by the chief noblemen and gentry of all the Provinces of India.

Mr. S. K. LAHIRI. Of all Indian gentlemen who have taken up the publishing business, no name is more widely known and respected than that of Mr. S. K. Lahiri of Messrs. S. K. Lahiri & Co., Calcutta. He was born in 1859 in Calcutta,



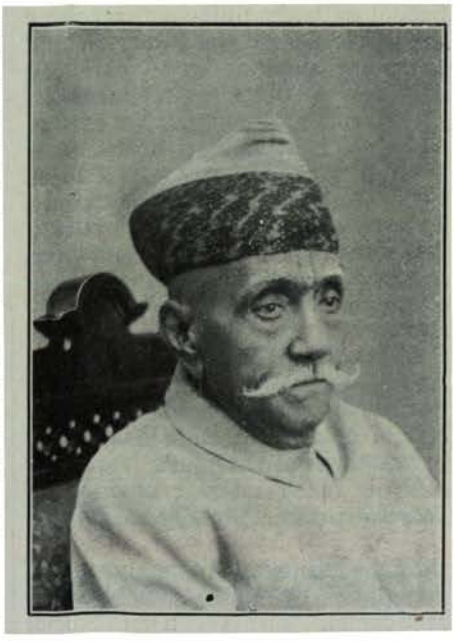
Mr. S. K. LAHIRI.

and is the second son of Mr Ramtanu Lahiri, a gentleman of the highest and most unblemished character. The sterling honesty and integrity of the father have been sedulously cultivated by the son, and these qualities have ever been reflected in his business transactions. Mr. Lahiri was educated in Krishnagar A. V. School, and in 1879 joined Krishnagar College. But ill-health unfortunately compelled him to give up his studies. From his boyhood Mr. Lahiri was ambitious to possess a business of his own. In 1883, under the patronage of the late Pandit I. C. Vidyasagar, C.I.E., a very intimate friend of Mr. Lahiri's father,

and Raja Peary Mohun Mukerji, C.S.I., a favourite pupil of the elder Mr. Lahiri, he started a bookselling business on a very modest scale. In a short time he began to publish school-books for Indian children. The business increased rapidly, and Mr. Lahiri, by dint of his industry and perseverance, now occupies a high position among Indian publishers. Of the many authors whose works he has published, the names of Sir W. W. Hunter, K.C.S.I., Raja Peary Mohun Mukerji, C.S.I., Justices O'Kinealy, Beverley, Field, Rampini, Ameer Ali, Pargiter, and Caspersz, Mr. R. C. Dutt, C.I.E., Sir Henry Cotton, Kt., K.C.S.I., Sir Henry Prinsep, Kt., K.C.I.E., Sir Gurudas Banerji, Kt., Rev. Protap Chandra Mazoomdar, Prof. P. K. Lahiri, M.A., Pandit S. N. Sastri, M.A., Professors Rowe and Webb, are worth mentioning, as they show that he enjoys the confidence of many representative men. The *Englishman* of the 14th March 1906 made the following remarks on Mr. S. K. Lahiri's services to the publishing business in India:—

"Mr. Lahiri holds very much the position that is held at home by such men as John Murray, Macmillan, or Longman. Mr. Lahiri is a gentleman of good birth and respectable early training who has successfully devoted his abilities and opportunities to the creation of a vast publishing and bookselling business, specially in the educational line."

Messrs. LAKHMIDAS KHIMJI, SONS & Company, formerly Lakhmidas Khimji & Co. Established 1863. Head Office, Oriental Buildings, Hornby Road, Bombay. Originally started business as piece-goods merchants, but are now considerable owners of Cotton Mills, besides acting as Mill Secretaries, Treasurers and Agents. The firm was founded in Bombay by the well-known philanthropist and social reformer, Mr. Lakhmidas Khimji, J.P., a Hindu, Bhatia by caste. Before the formation of the firm he carried on a piece-goods business with his brothers and in early life acquired repute as a successful and shrewd man of business. Mr. L. A. Wallace, connected with Messrs. Frith, Sands & Co., wanted then to establish his own firm, and succeeded by the co-operation and support of this Company, who became guarantee brokers for the import and export business. Mr. Lakhmidas Khimji also assisted the English firm in floating "The Burmah Trading Co., Ld.," becoming the first Director, and remaining on the Board for no less



The late Mr. LAKHMIDAS KHIMJI.

than 35 years. The result has been unique in the history of Indian trade. An original share of Rs. 1,500 is now quoted as high as Rs. 9,000. In 1858 when the Income-tax was first levied, causing great discontent, especially among the trading communities, who loudly complained of the inquisitorial character of the tax, Mr. Lakhmidas Khimji was approached by the Bombay Government, as he possessed great influence, especially in the Native mercantile world, and was asked to help in reconciling the business people to the new impost and in assessing their true annual income. He accomplished the commission so satisfactorily that he received thanks from the Government through Sir George Russell Clerk. He relieved, to a large extent, the famine-stricken people of the Deccan, particularly of Sholapur, when the famine was working its worst ravages; and again on this occasion he was thanked by the Government for his benevolence and public spirit. At the time of the Bombay riots in 1893 his advice and influence was most valuable and effective, both to the Government and to the towns-people. Mr. Lakhmidas Khimji is extremely liked and esteemed by the whole Native public, and particularly by the cloth merchants, and as a recognition of his public services, they named a cloth market the "Lakhmidas Khimji Cloth Market," although he was in no way financially connected with it. After working up Messrs. Wallace & Co. for about 25 years, Mr. Lakhmidas' activity found a suitable scope in the rising Mill Industry, and the Lakhmidas Khimji Spinning and Weaving Co., Ld., was the outcome. He took up the management of the Mills by appointing his firm Secretaries, Treasurers and Agents. Capital Rs. 10,00,000. The Mills contain 42,500 spindles and employ 1,350 hands.

For over 25 years Mr. Lakhmidas was the head of the Halai Bhatia community, and he established a useful system for the management of caste affairs, showing a thorough knowledge of all questions relating to caste. Before he interested

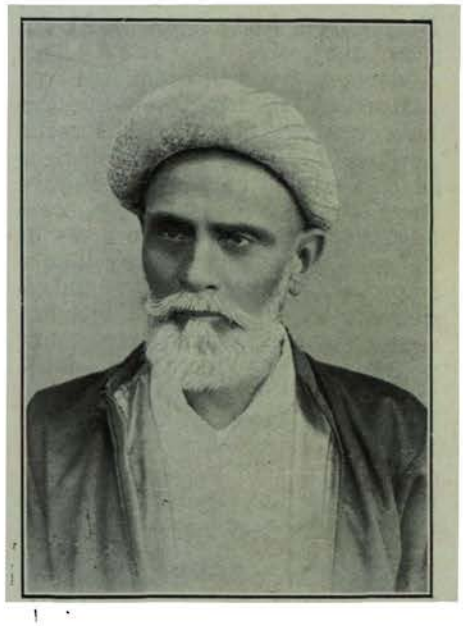
Mr. DAMODAR LAKHMIDAS.

himself in the matter there was neither order nor regularity observed, but his regulations not only satisfied his own caste brothers, but the other Hindu communities have also adopted the system. The

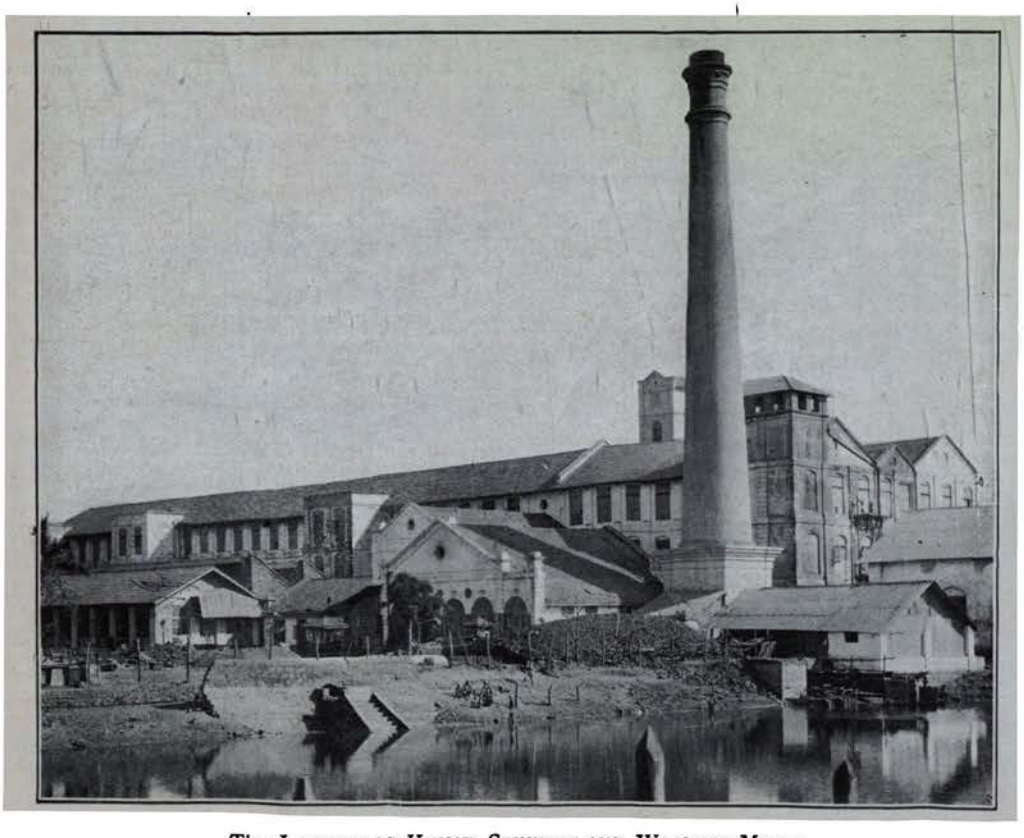
Bhatia Mahajan has, in recognition of his singular services, placed his life-size oil painting in the Mahajan Wadi, as a tribute to his memory.

At present the management of the firm is in the hands of the senior partner, Mr. Damodar Lakhmidas, J.P., who is a young and energetic member of the enterprising Bhatia community, and has shown a high capacity in the management of his firm's large and varied business. He is also a Director of several Joint Stock Companies, *viz.:* The Lakhmidas Khimji Spinning and Weaving Co., Ld.; The Tricumdass Mills Co., Ld.; The Bombay Cotton Manufacturing Co., Ld.; The Bombay United Manufacturing Co., Ld.; The Jivraj Baloo Mills Co., Ld., etc., etc. The Government of Bombay has been pleased to nominate him as an Honorary Presidency Magistrate for the City and Island of Bombay. Following the footsteps of his worthy father, he also shows a liberal and generous heart, is a benefactor of the poor and the needy, and encourages liberal education, literature, and the fine arts.

Messrs. ABDOOLABHOY and JOOMABHOY LALLJEE, Merchants and Government Contractors. Head Office: Khoja Mohalla, Bombay, India. Branches:—Calcutta, Chittagong, Aden, Macala, Berbera, Bulhar, and Zaila. This firm deal in all kinds of grains, exporting the same from Bombay, Calcutta, and Chittagong. They also export yarn and piece-goods, coal, salt, ivory, pearls, mother-of-pearls, shells, coffee and hides. In their import branch they deal in all kinds of sugars, European and Aden salts, and piece-goods. They have agencies in all the chief ports in Europe and America, and carry, purchase, or sell, merchandise and goods, on account of approved constituents, at a very reasonable commission. They are registered Contractors to Government at Bombay, Calcutta, Aden, Berbera, and Somaliland, and supply all the required grain, clothing and transport materials at military stations for men and animals. At Macala they act as Agents for the Bombay and Persia Steam Navigation Company, Limited. The business was originally started by Mr. Lalljee Sumar, an inhabitant of Cutch, who belonged to the Khoja community (an Indian sect of Mahomedans). He first established business at Macala (Arabia), then at Aden, and afterwards in Bombay about 60 years ago. Mr. Lalljee Sumar left three surviving sons, Messrs. Hajeebhoy, Abdoolabhoy, and Joomabhoy, who were all well trained in business methods. Mr. Abdoolabhoy has travelled as far as Arabia and China. The firm established a steamship line between Bombay, Kathiawar, Cutch and Karachi, and another one for Goa and the Coromandel Coast. There were five steamships, besides several steam launches and boats. This branch was managed by Mr. Joomabhoy, who was a J. P. of Bombay and a Municipal Commissioner. He died about 18 years ago, leaving one son, Mr. Fazalbhoy, who is also a Municipal Commissioner. At the death of Mr. Joomabhoy, Mr. Hajeebhoy separated from the firm, which was reorganised under the pres-



Mr. ABDOOLABHOY LALLJEE.



The LAKHMIDAS KHIMJI SPINNING AND WEAVING MILLS.

ent style, with the following partners:—Messrs. Abdoolabhoy Lalljee, Fazulbhoy Joomabhoy, Ismailbhoy Abdoolabhoy and Nusserbhoy Abdoolabhoy. In the year 1905, Mr. Hoosenbhoy Abdoolabhoy was also admitted as a partner. All the members of this firm have travelled a great deal for the purpose of gaining practical insight in commercial matters, and have therefore been considerably benefited by their personal knowledge of different countries and their inhabitants, their habits, customs and requirements. Mr. Y. I. A. Lalljee has recently visited England for this purpose and expects shortly to be admitted as a partner. Mr. Abdoolabhoy Lalljee is a Vice-President of the Khoja Shia Isna Asri community, of Bombay, and he is well known for his charities and ready help in the cause of education.

Messrs. W. LENNOX & Co., Manufacturers and General Merchants, 6, Commercial Buildings, Calcutta; established in 1905 by Mr. W. L. Harwood. The business was, at first carried on at No. 50, Tindal Garden Road, Howrah, where Mr. Harwood, assisted by three Europeans and a staff of natives, installed the newest machinery, run by steam plant, and manufactured asbestos and mica non-conducting compositions (the excellent qualities of which are well known in Engineering circles).

The former is known as the "Lennox Asbestos" Composition, for covering all steam-heated surfaces, and the latter as "Jones' Patent" Mica Compositions. This composition is genuine and identically the same as that manufactured by Messrs. J. D. Jones & Co., and sold by that firm under the trade mark of "Grayite," the license for the manufacture of the same having been granted to Messrs. W. Lennox & Co., as the result of a lawsuit in the High Court of Calcutta.

Besides the above compositions, Messrs. W. Lennox & Co. also carry on business as manufacturers of lubricating mica powders and paste, mica axle grease; crushed mica; mica chimneys; chimney protectors and globes, mica boxes and tinware. In 1907 owing to the firm's business connections having extended, not only throughout India, Burma and Ceylon, but to Europe and the Colonies, they found that they had to extend their office and works to meet the requirements of the trade. They opened their Head Office at their present address: 6, Commercial Buildings, Calcutta, having a branch office at 50, Tindal Garden Road, Howrah, and transferring their works to bigger grounds at No. 17-3, Howrah Road, Howrah, on the banks of the Hooghly. In the same year they took to importing and exporting goods between India and Europe and the Colonies, and are now also doing a large business in Indents. Their imports are chiefly asbestos goods, slag wool, lubricating oils, grease, felts, ropes, etc.; large stocks of which are held in their godowns in Calcutta and Howrah. Their exports are chiefly mica; crude, sheets, flaked, powders, and compositions. They are Managing Agents for the Pioneer Mining Co., who have mines of mica, graphite and manganese scattered in various parts of India, the produce of which finds its way to England and Germany. They are also Managing Agents for the Excelsior Mining Co., Patan, Rajputana. They are actually the owners of this concern, but owing to the Raja of the place objecting to grant a lease to work mines in his country, to an European firm, Messrs. Lennox & Co. were compelled to obtain the same through a native, and have styled themselves Managing Agents only, although they are virtually the proprietors. Mr. Harwood, the

Messrs W. LENNOX & Co.'s OFFICE ROOM.

proprietor of the business, was born in Bengal in 1881, and was educated in the Hills. He was brought up to the profession of mechanical engineering in H. M.'s Mint, Calcutta.

Messrs. LOUIS-DREYFUS & Co., Grain Shippers, Wheeler's Buildings, Hornby Road, Bombay. Established in the year 1905. Partners:—Messrs. Leopold Louis-Dreyfus, Louis Louis-Dreyfus, Charles Louis-Dreyfus, and Robert Louis-Dreyfus. The firm was founded by Mr. Leopold Louis-Dreyfus in the year 1850, to carry on the business of Grain Merchants and Bankers, with its Head Office in Paris, and branches in various parts of the world. The Bombay branch principally export grain, wheat and seeds. They have branches in Calcutta and Karachi, and buying agencies all over India. The firm usually charters its own steamers, and has warehouses at di erent Indian seaports. The firm is a member of the Chamber of Commerce, Bombay.

Mr. LEOPOLD LOUIS-DREYFUS, the founder of the firm of Louis-Dreyfus & Co., is Consul-General for Roumania at Paris, and "Officier de la Legion d'Honneur." He has also been decorated several times by the present and former Czars of Russia. Mr. Louis Louis-Dreyfus, eldest son and partner of Leopold Louis-Dreyfus, is a member of the Chamber de Deputes, Paris. Mr. Charles Louis-Dreyfus, second son and also partner of the firm, is a Chevalier de la Legion d'Honneur, and the youngest son, Mr. Robert Louis-Dreyfus, also a member of the firm, manages the Banking Department in Paris.

Mr. WILHELM JEELSOHN, Manager of Louis-Dreyfus & Co., Bombay, obtained his commercial knowledge and experience in Germany, Belgium, London, and South Africa, in connection with his firm. He came to India in December 1905 to take charge and manage the Company's branch in Bombay. He represents the firm on the Bombay Chamber of Commerce.

Messrs. T. P. LUSCOMBE & Co., Mechanical and Sanitary Engineers, Coachbuilders, Manufacturers of Fishing Tackle, Camp-equipage, Gunfittings, and Wrought and Cast-iron work of all kinds. Licensed dealers in Fire-arms and ammunition. Steam works and Foundry, 5, Goodshed Road, Allahabad. Established, 1872, by the proprietor, Mr. Thomas Popham Luscombe. The works were started at first in quite a small way, but owing to the reputation which Mr. Luscombe has gained in the business, they have developed, till they are now in a position to give employment to 150 to 200 hands, including two Europeans. These are nearly all skilled workmen, who have been in the service of the firm from 10 to 25 years. The works are equipped with the latest machinery for iron and general engineering and cabinet work.

Mr. T. P. LUSCOMBE

There is a foundry attached, and altogether, there are some 50 machines, including steam-hammers, etc., at work. The firm makes a speciality of sporting requisites of all kinds, fishing tackle, guns, camp-equipage and repairs to all kinds of sporting-tackle and fire-arms. The premises cover three and a half acres, besides compound, etc., and are a model of cleanliness and order.

Mr. Thomas Luscombe, the founder and proprietor, is a native of Donnybrooke, near Dublin, Ireland, where he was born in 1845. He entered the merchant-service, in which he served his apprenticeship in the White Star Line; but in 1860 he gave up the sea to proceed to the Australian gold fields, where he was rewarded with fair success. Coming to India in 1863, he entered the service of the East Indian Railway Company, and was for a time employed as a travelling ticket-inspector and private detective. Fishing had a great attraction for him, as sport, and he has established a name as an expert in the art in India; for he is a noted fisherman, and the acknowledged head of the fishing-tackle and camp-equipage trade of India.

Messrs. MACKINNON & Co., Proprietors, The Old Brewery, Mussoorie. This flourishing business is of over sixty years' standing, having been established in the early "forties," by the late Mr. Bohle. In the year 1850 Mr. Bohle was succeeded in the business by the late Mr. John Mackinnon, under whose management the concern grew in importance. Mr. Mackinnon effected great improvements in the plant and buildings. He was ably assisted by his two sons, Mr. Philip Walter Mackinnon and Mr. Vincent A. Mackinnon. In the year 1870 Mr. Mackinnon senior died; and his sons succeeded to the business, which they proceeded to enlarge with conspicuous success. By their energy, backed by experience, they gave Mussoorie beer a reputation which enormously increased the demand, so that whereas in the early days of the business, the whole output for the year was but 100 hogsheads, at present some 7,000 hogsheads are brewed at the Old Brewery. The brothers Mackinnon have very largely added to the brewery premises, having built large and commodious buildings, store houses, and immense cellarage. The premises now cover about six acres. They have also immensely improved the plant, which is all now thoroughly up-to-date, and comprises the most modern systems of brewing. Every appliance necessary to the brewing of high-class beer is found on their premises. Water power is used for the driving of the machinery of the brewery, an American wheel being used for obtaining power. All the water used for brewing purposes is drawn from a spring of great purity, near the brewery, which has a temperature not exceeding 56 degrees and which by

analysis has been proved to closely resemble the water-supply of the famous breweries at Burton-on-Trent. Messrs. Mackinnon & Co. do a very large business, supplying beer throughout India. Owing to the very large demand upon their produce, the firm of Mackinnon & Co. opened another large brewery situated at Jubbulpore, C. P., in the year 1895, which is furnished in the same up-to-date style as their Mussoorie establishment. This brewery is supplied with water from the town supply and also from wells in the neighbourhood. Here the firm produces some 4,000 hogsheads of beer per annum. All the hops used in the brewing of beer at both the breweries owned by the firm, are imported from England, being the produce of the county of Kent. The barley is produced locally and malted in a fine German malt kiln at Mussoorie, specially erected for the purpose by the firm. The firm have very large contracts for the supply of beer to the troops in various cantonments. They also do an extensive trade in bottled ale, which is specially brewed for the purpose.

Mr. P. W. MACKINNON.

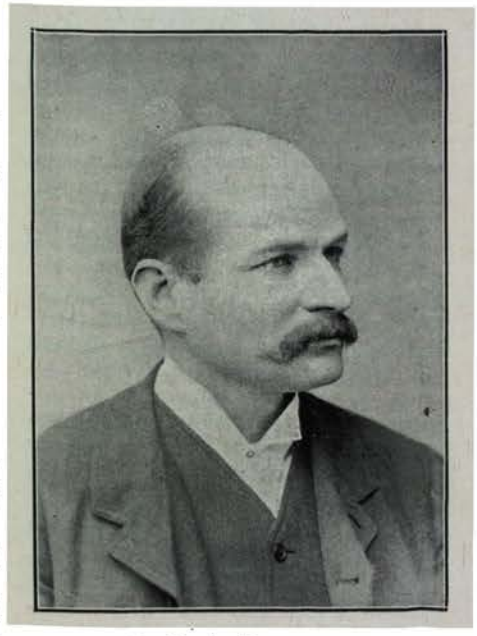
They have excellent facilities for shipping their produce in this form.

Mr. Philip Walter Mackinnon, of the firm of Mackinnon & Co., Brewers of Mussoorie and Jubbulpore, was born at Dehra near Mussoorie, in the year 1849, and educated by his father, who, previous to taking to business, had been a schoolmaster. From an early age he assisted his father in the business of the brewery. After succeeding to the property, he visited England in the year 1871 for the purpose of studying the processes of brewing at Burton-on-Trent. Here he obtained a thorough knowledge of the English system of brewing ales. Mr. P. W. Mackinnon has, throughout his career, taken a keen interest in the public affairs of Mussoorie, taking an active part in all that tended to the improvement of the town and district. He has been a member of the Board of Municipal Commissioners for over 20 years and is now senior Vice-Chairman of that body.

Mr. Vincent Arthur Mackinnon, also of the firm of Mackinnon & Co., Brewers of Mussoorie, was born near the old place at Mussoorie in the year 1852. He also was educated under his father. He gained a thoroughly practical knowledge of brewing at the Old Brewery, and is a very competent brewer. He has visited England several times in the interests of brewing and the business generally. Mr. V. A. Mackinnon is a long-standing member of the Municipal Board of Mussoorie, and has been Vice-Chairman for several terms. The brothers Mackinnon are active and enterprising business men, and their public spirited energy has done much to improve Mussoorie and its surroundings.

The Happy Valley Estate, which is one of the beauty spots of Mussoorie, is the property of Mr. V. A. Mackinnon. He purchased it in the year 1903, and has done a great deal towards its improvement since. The estate comprises about seven acres of ground, laid out in Racquet Courts, Canadian Tennis Courts, and Lawn Tennis Courts. There is a fine Pavilion and Billiard Room. The well-known Happy Valley Club is located on these premises. There are various other handsome buildings on the estate.

The brothers Mackinnon are Directors of the Mussoorie Polo Ground and Race Course Syndicate. They are extensive property-owners, and have considerable interest in tea property, forests and timber lands. The Bhilara Estate, which contains about 550 acres, including some charming building sites, is their property, also the Park Estate of 500 acres, heavily timbered ; also Snowdon, 220 acres of splendid



Mr. V. A. MACKINNON.

forest. The brothers Mackinnon have an up-to-date Forestry Department, and huge quantities of timber have been cut from their estates since 1850, which has been more than replaced by new plantings.

Mr. P. W. Mackinnon resides at Lynndale, and Mr. V. A. Mackinnon at Kandi Lodge.

Rai Sahib BANKIM CHANDRA MAJUMDAR, District Engineer, Angul, Public Works Department, and Executive Engineer, Tributary States, Orissa (retired), was born at Maheswarpasha, in the District of Khulna, in 1864. He comes from a highly respectable Kayastha family, descended from Birat Guha, one of the five Kayasthas who came from Kanauj and settled in Bengal during the reign of Adisur, King of Bengal. Bankim Chandra received his early education at the Jenkins School, Cooch Behar, and later, entered the Civil Engineering College, Sibpur. On joining the Public Works Department, his first appointment was as an Overseer in the District of Hooghly. He proved a valuable servant to Government, and rose to

the position of Executive Engineer of Wards Tributary Mahals in Orissa, under Government management, and District Engineer,

Rai Sahib B. C. MAJUMDAR.

Angul. The title of Rai Sahib was conferred upon him by the Government of India in 1896 in recognition of his valuable services in opening out the Garjat States. He retired from the service in 1903 and settled at Khulna where he has taken considerable interest in the engineering works in the district. He is Honorary Vice-President of the Local Board, and is connected with several other public bodies. Since his retirement he has embarked in private business and is the proprietor of a soorkey mill, etc., at Khulna where he carries on his profession as an engineer and contractor under Government and the Eastern Bengal State Railway.

Babu SINGHO DASS MALLIK, Builder, Surveyor, Architect and Valuer, Calcutta, is a member of the old and distinguished Mallik family of Calcutta, held in great esteem for their piety and benevolence. Babu Singho Dass is the great-grandson of the late Babu Nemye Churun Mallik. He is now the head of the elder branch of the family, and is connected with many of the wealthy families of his native city. He received his early education in the Government Normal School, and later on at Jorasanko. He then entered the Hindu College, where he completed his studies in English. After leaving school, he first turned his attention to literature, and he edited two Bengali monthly magazines, called "Bidyashahini" and "Ganoprodayini." In 1873 he started his present business as a Civil Engineer, Surveyor, Builder and Contractor, under the name of S. D. Mallik & Co., and his son, Babu P. C. Mallik, is now a partner in the firm. He is one of the proprietors of the dispensary until recently known as the "Wales Medical Hall," but now conducted under the style of Graduate & Co.

Babu S. D. MALLIK.

In Freemasonry, Babu S. D. Mallik has displayed considerable interest; he is an old Past Master, and has taken many degrees in the Craft. For the past twenty years he has been a builder and contractor to the Administrator of Bengal, and has also worked under Mr. W. G. L. Cotton, M.INST.C.E., who entertained a high opinion as to his capabilities in his line of business. Among the buildings he has erected may be mentioned the old Incinerator in Lower Circular Road, Calcutta, which stood near the eastern end of Dhurrumtollah Street. On this he worked under the direction of the late Mr. Harrington, C.E., from whose design the building was constructed.

Messrs S. MANASSEH & SONS, Merchants and Commission Agents, Calcutta. This firm was started in the early sixties, by the late Mr.

Mr. S. MANASSEH.

S. Manasseh, with a branch at Singapore, under the name and style of S. Manasseh & Co., managed by his partner, Mr. Saul J. Nathan. After a very successful business career, Mr. S. Manasseh died in 1894, and the business in Calcutta was taken over by his sons, under the name and style of S. Manasseh & Sons, and conducted by his eldest son, Mr. Maurice S. Manasseh. The firm is largely interested in the opium, gunnies, rice, and oil trade with the Straits Settlements, Burma, and China.

Messrs. H. D. MANNA & Co., Chemists, Druggists, Perfumers, Rubber Stamp-makers (known as "The Royal Rubber Stamp Works") and manufacturers of Indian Condiments. Head Office :—3-1 to 4, Gulu Ostagur's Lane, Calcutta. General Office and Show Room :—356, Upper Chitpore Road, Calcutta. Condiments Factory :—26, Gulu Ostagur's Lane, Calcutta. Proprietor, H. D. Manna; General Manager, B. Manna, assisted by J. N. Manna, D. N. Manna and others.

This firm deals exclusively in chutneys, jams, jellies, preserves, syrups, pickles, curry powders, sauces, etc.,

of their own manufacture, for which they have obtained a high reputation. Besides supplying their specialities throughout India, they export largely to Europe, Australia, Japan, China, America and other countries, where their goods are highly appreciated. They have received a prize medal and diploma of honour at the World's Fair Paris Exposition of 1900, a gold medal at the Calcutta Industrial Exhibition, 1900, a gold medal at the Cape Town Industrial Exhibition of 1904-5, a gold medal at the Indian Industrial and Agricultural Exhibition, Benares, and a gold medal at the Indian Industrial and Agricultural Exhibition, Calcutta,

Mr. H. D. MANNA.

1906-7. The firm started the manufacture of perfumes about five years ago and they turn out a large quantity, in addition to their other manufactures. The business was established in 1880 by Mr. H. D. Manna, M.R.A.S., F.R.S.L.(Lond.), who is a native of Calcutta, and received his education in Bengal. He started the business in quite a small way, but by the excellence of his methods of manufacture has so increased it, that it now gives employment to about 70 hands. Mr. B. Manna, who is now the general manager of the concern, is the son of Mr. H. D. Manna, and was born at Calcutta. He studied at the University College, Calcutta, and also at the College of Physicians and Surgeons of Bengal. He joined

Mr. B. MANNA.

his father in the business in 1900, and under his control it has considerably increased.

Messrs. MARSHALL & Co., Engineers and Merchants. Office, Esplanade Road, Bombay. Sole Proprietor, Mr. N. M. Marshall, A.M.I.E.E., M.SOC.I.E. The firm were established in the year 1893 and deals principally in mill-furnishing machinery and stores. In addition, the firm act as Engineers for their various constituents. During the last four years they have opened a department for Electrical Engineering and have been very successful therein. Mr. Marshall has opened a motor show room and garage near the Wellington Mews, Woodhouse Bridge Road, called the Indian Automobile Company. He engages several British mechanical engineers and personally devotes much time to this work. The mill stores and godowns are at Parel, Bombay, and the Electrical Engineering show rooms are in the Fort, Bombay. Mr. Nusservanjee Maneckjee Marshall, A.M.I.E.E., M.SOC.I.E., Sole Proprietor of Messrs. Marshall & Co., Engineers and Merchants, Bombay, was born in the year 1869 at Broach, near Bombay. He belongs to a distinguished family in the district. He was educated at Broach Government High School. He migrated to Bombay in 1886 and joined the Victoria Jubilee Technical Institute in the first batch, and passed successfully through the engineering and the textile courses. Subsequently he joined Messrs. E. D. Sassoon & Co. as an apprentice. This Company is one of the largest and richest firms in Bombay. He soon became Assistant Mill Manager, and supervised the machinery erection and fittings of the Jacob Sassoon Mills, one of the largest mills in the world. After serving for about two years and-a-half he

Mr. N. M. MARSHALL.

severed his connection with this Company, and in 1893 he started business on his own account. To give a finishing touch to his experience, and for the benefit of his business, he several times visited Europe. During his last visit in the year 1906 he took a keen interest in the motor car industry, and attended various trials organized by the Automobile Club of Great Britain and Ireland. Subsequently he became a Member of the Club, being the only Indian Member elected. Mr. Marshall also took great interest in the different Motor Trials organized by the "Motor Union of Western India," of which he is

a Member of the Committee. During his last visit to Paris he became a Member of the "Société International Des Electriciens." He was also admitted as a Member to the Institution of Electrical Engineers, London, in the year 1906.

Messrs. MARTIN COHEN & Company, Merchants and Agents, 9, Marine Street, Fort, Bombay. Established in the year 1883 by Mr. Martin Cohen, Sole Proprietor.

Mr. MARTIN COHEN.

This firm principally deals with contractors, and supplies different materials, including canvas, tents, etc., used particularly by the Commissariat Department and the Arsenal. The firm has several correspondents in England, and agencies throughout India.

Mr. Martin Cohen is Sole Proprietor of the firm, and was born in Hamburg, Germany, in the year 1843. After completing his education he joined Messrs. Heynemann & Company in 1864 in San Francisco, and subsequently became a partner in the firm. In the year 1880 he returned to Manchester and joined his brother, and in 1883 came to Bombay, starting his own business as Manufacturers' Agents and Merchants, under the name and style of Martin Cohen & Co. Mr. Martin Cohen has also been the Commercial Agent for the Brazilian Government in Bombay since 1905.

Mr. FREDERICK EDWARD GEORGE MATHEWS, House Agent, Merchant and Importer of Hardware, Auctioneer, Builder and Contractor, Naini Tal. Mr. Mathews started his present large and substantial business in 1872, and has worked it up to its present position under his own undivided proprietorship. His business comprises everything connected with house building and fitting. He is responsible for the erection of about forty large houses in Naini Tal, and many public buildings in that station are also his work, including the Ramnee Convent, St. Joseph's College, The Girls' High School, Murray's Exchange, The Orderly Room, Volunteer Recreation Room, and Waverley Hotel. Mr. Mathews holds monthly auction sales regularly throughout the season and is himself a large house proprietor in the station. He was born in India, at Muttra, in the year 1838, and educated privately. For eight years he served in Government employ in the Subordinate Medical Service, and part of his service was during the great Indian Mutiny in 1857-8. He was in the Fort at Agra during that time, and was awarded the Indian Mutiny Medal. In 1862 he retired from Government employment and joined the Kumaon Ironworks as clerk of works. In 1872, after those ironworks were closed, he started for himself as a house agent at Naini Tal and devoted himself to building up a general, commercial and auctioneering business, in which he has been eminently successful. His public services have included membership of the Municipal Board and an Honorary Magistracy at Naini Tal and membership of the Ramnee Hospital Board. He has been an ardent volunteer, and an officer for 20 years.

Mr. JOHN McGLASHEN, F.C.S., Superintendent, Cawnpore Sugar Works Company, Limited, Cawnpore, was educated at the Glasgow Academy School, and at Bath, England. Mr. McGlashen received his technical training as a chemist with Messrs. Wallace, Tatlock, and Clarke, Glasgow City Analysts, and also at the Glasgow Technical College. He was Chief Assistant to Mr. Clark, Glasgow City Analyst, for two years, and subsequently entered the service of Messrs. John Walker & Co., sugar refiners in Greenock, as head chemist. In the year 1895, he came out to India for Messrs. Duncan Stewart & Co., and superintended the erection of the Cawnpore Sugar Works. He has remained in charge of the works as Superintendent ever since.

Messrs. ALEXANDER McKENZIE & SONS, Timber Merchants, Saw-millers, Contractors and Cabinet-makers, was founded in the year 1881 by the late proprietor, Mr. Alexander McKenzie, a well-known citizen of Bombay whose death took place in September 1906. Highly esteemed by all who knew him, Mr. McKenzie was a man of exceptional ability and occupied no small position in Bombay Municipal and business affairs. He was a Justice of the Peace, a Member of the Municipal Corporation, and acted as Chairman or Director in numerous important companies in the city.

Mr. McKenzie began his career in India as Manager of the Bombay Saw-milling Company, in which capacity he gained twenty years of valuable experience. His early training in Scotland was acquired in a well-known Glasgow firm of cabinet-makers, with whom he might have remained, had he not been tempted like so many others of his countrymen to seek his fortune in a foreign land. From a modest beginning the firm of Alexander McKenzie & Sons grew apace, and on so sound a basis that to-day we may congratulate the owners in having not only the largest business of this kind in Bombay but the largest throughout the whole of India. The excellence of the work, the skill and promptitude with which orders and contracts are executed, have gained for this firm the enviable reputation which it bears to-day.

The Saw Mills at Mazagon are fitted up with modern wood-working machines, which enable the firm to manufacture all kinds of cabinet and joinery work in a style much superior to what is generally turned out in India.

Orders executed in teak have been repeatedly exported to Europe, the workmanship of which has always given the greatest satisfaction.

There are few important buildings in the city of Bombay to-day that do not testify to the beauty and excellence of the wood-work carried out by this firm.

The works are installed with electric light for night work, as this firm has been frequently called upon to execute orders in cases of extreme urgency. An interesting instance of this occurred in 1899, when they were called upon by the Government to fit out transports to convey troops and horses from Bombay to Durban, and it was in no small measure due to the energy and zeal of Messrs. Alexander McKenzie & Sons that sufficient ships were ready to pour in the men and horses so necessary to stem the onslaught of the Boers in the early stages of the South African war.

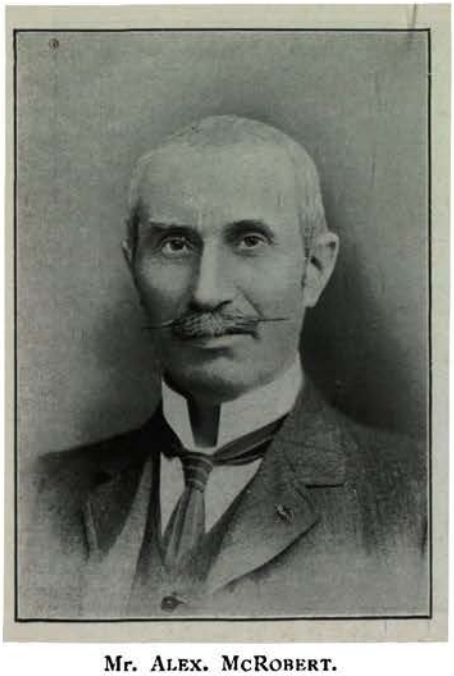
The late Mr. Alexander McKenzie has been succeeded by three of his sons, now all partners in the firm. The senior partner, Mr. George McKenzie, having completed his training in England, came to Bombay to join the firm, and has been associated with his father in the business for a period of over 17 years. He is thoroughly conversant with every branch of the work and has done much to extend the business. He is a Member of the Institute of Architects, a J. P. for the Town and Island of Bombay, and a Director of several mercantile companies. He is ably supported by his junior partners, Messrs. A. L. and K. E. McKenzie. Mr. A. L. McKenzie received his early education and training at Coopers Hill College, England. He spent two years with an Engineering firm in Glasgow and five years in Burma, where he had ample opportunities of studying the growth, development, and conversion of teak, which is the principal timber used by the firm. Mr. Kenneth E. McKenzie, A.M.INST.C.E., was also educated at the Coopers Hill College, he is an Associate Member of the Institution of Civil Engineers, England. He finished his training with a well-known Glasgow Architect, and takes charge of all the constructional and building work carried out by the firm.

Mr. G. McKenzie.

Interior View—Byculla Saw Mills.

The Hon'ble Mr. ALEXANDER McROBERT (*Lieut.-Colonel, Cawnpore Volunteer Rifles*), President, Upper India Chamber of Commerce, was born at Aberdeen in 1854, and educated there, and at the Royal College of Science, London.

His first business experience was gained with the firm of Messrs. Alexander Pirie & Sons, Paper-makers. He was subsequently Neil Arnott Lecturer in Experimental Physics in the Mechanics' Institute, Aberdeen, and Lecturer in Chemistry at Gordon College in the same city. In the year 1884 he came out to India in order to take up the management of the Cawnpore Woollen Mills and has remained

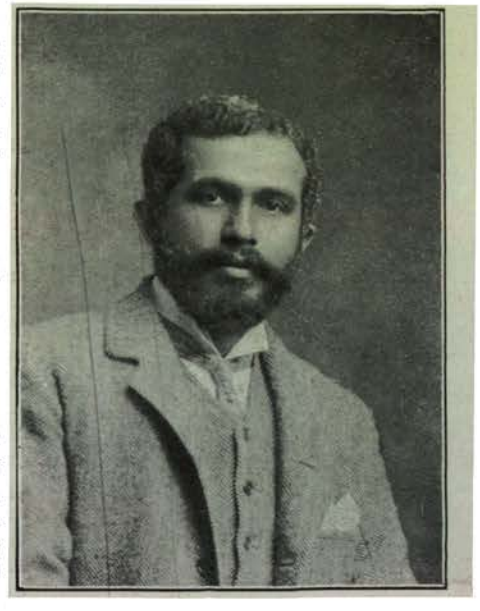


Mr. ALEX. McROBERT.

in the country ever since. These mills have been much enlarged and their business increased under his able management. Mr. McRobert has served for four terms as Member of the Lieutenant-Governor's Council, representing commercial interests. He is a member of the Managing Committee of the Thomason Engineering College, Rurki, and a Fellow of the University of Allahabad. He is one of the founders of the Upper India Chamber of Commerce and has been Vice-President or President of that influential body almost continuously since it was started. He is Colonel Commanding the Cawnpore Volunteer Rifles. The Hon'ble Mr. McRobert's contributions to commercial and other public affairs have been numerous and valuable. He is a well-known authority on economic questions.

Messrs. H. M. MEHTA & Co., Ld., Merchants and Machinery Agents. Established in the year 1897. Offices, 39-43, Forbes Street, Fort, Bombay. This firm deals in all kinds of machinery, especially cotton-mill machinery, and the stores required for such mills, having its branches in Manchester, Glasgow, and Ahmedabad, with agencies all over Europe and India. The present paid-up Capital is Rs. 1,00,000 and the Reserve Fund exceeds Rs. 2,00,000. Mr. Mehta, the founder, started with a very limited capital of Rs. 15,000, which was the first call of the then nominal capital of Rs. 50,000. But this small capital was so very intelligently handled that the concern was never short of funds, and after declaring 25 per cent. as the smallest dividend, it has been able to buy up the Victoria Mills situated at Gamdevi Road, Bombay, employing over 800 hands and having 31,000 spindles. This purchase was made in conjunction with Mr. M. G. Parekh of Ahmedabad, who is also a partner in the firm of Messrs. H. M. Mehta & Co., Limited, and the cost, £16,000, was paid out of earnings. The Mill was so ably managed that the first year's earnings made up its full purchase value. The firm are also Chief Agents for the London and Lancashire Fire Insurance Company.

Mr. Homi M. Mehta is the senior partner. He was born in 1871 in Bombay and was educated in the Elphinstone and Fort High Schools. After passing the first University Matriculation Examination he joined the Bombay Mint in the year 1890 as an Assistant. After a year he joined the China Mills, Limited, as an Assistant Accountant on a small pay of Rs. 50 per month. Here he utilized every opportunity in getting a thorough knowledge and experience of Mill work. In the year 1894 he joined the firm of Messrs. D. R. Umrigar & Co., who are mill-store suppliers, as their head salesman. He severed his connection with this firm in the year 1896 and started his own Company under the name and style of Messrs. H. M. Mehta & Co., Ld. Mr. Mehta exercised all his energy in bringing success to the Company, and the wonderfully satisfactory result is mainly due to him. He visited Europe three times to give a finishing touch to his experience in the Mill and Cotton line, and to develop the business of the Company. He is Chairman of the Mill Stores Trading Company, Limited; B. P. Narielwalla Co., Ld.; and the Victoria Cotton Mills. In addition to this he is a direct representative of eleven firms in England as follows:—large mill engines, by



Mr. H. M. MEHTA.

George Sexon; Lancashire and Cornish Boilers, by John Marshall & Co.; mill gearing, complete, by P. R. Jackson & Co., Ld.; looms and weaving machinery, by Hacking & Co., Ld.; calenders and finishing complete plants, by Bentey & Jackson, Ld.; electric complete installations, by P. R. Jackson & Co., Ld.; leather beltings (Kawil Patent), by Kay and Wilkinson, Ld.; bobbins (Lockfast and Climax Patent), by Wilson & Co., Ld., Barnsley; spinning rings to fit any ring frames, by Eadie Bros. & Co.; card clothing of every description, by J. Lister & Sons; roller cloths, flannels, etc., etc., by S. Porritt & Sons, Ld.

Mr. MANGALDASS GIRDHARDASS PAREKH was born at Ahmedabad in the year 1861 and was educated in one of the local schools of that city. His father, who had very limited means, was a good accountant. He took great pains in giving his son a sound education and bringing him up as a thorough accountant. After finishing his school career, Mr. Parekh joined one of the local mills in Ahmedabad under the management of Mr. Munsukhbhoy Bhagoobhai, as a store-keeper on a small salary. It did not take him long to master the Store Department. By his keen foresight, he observed that, as the Mill industry was then in its

Mr. M. G. PAREKH.

infancy in Ahmedabad, a good margin was obtainable on the stores sold to the mills, and therefore he left his appointment, and made a start in trading in Mill Stores on his own account. He soon made money enough to venture in the trade of yarn, wherein he had extraordinarily good success owing to his sound judgment, forethought, and business acumen. With his gains he formed the plan of building a mill, and with the help of his friends, whose confidence in his business capacity was daily improving, he was enabled to get capitalists to take up the shares, and he eventually formed the Aryodaya Spinning and Weaving Co., Ld., with a capital of Rs. 5,00,000. He prospered in this attempt, which resulted in the extension of the mill. In 1897 he became a partner with Mr. H. M. Mehta, of Bombay, and helped him in starting the Mills Stores Trading Company of India, Limited. That was a lucky hit, and since then both the partners have fared exceedingly well in their various attempts. In the year 1901 he accepted the agency of the Rajnagar Spinning & Weaving Co., Ld., which was then in a very deplorable financial position. The original value of 1,000 rupees for each share had fallen as low as Rs. 50 only. Mr. Mangaldass with his usual tact and ability pulled this concern out of the mire, and the value of each share has risen from the low sum of Rs. 50 to Rs. 1,400. In 1904 he bought the Victoria Mills in Bombay with Mr. Mehta, which also proved a very successful bargain. In fact, Mr. Mangaldass is a self-made man, and by dint of his industry and foresight has amassed a large fortune within the last 15 years, and his yearly income at present is not far short of £40,000. He is a wonderful organizer, and the Ahmedabad trade recognizes him as such, and if spared, he will soon prove to be a "Tata" of Ahmedabad. He is the Secretary of the Mill Owners' Association of Ahmedabad. Mr. Mangaldas is well known for his charities. His purse was kept freely open during the last famine, when he distributed baked bread, grain, etc., very freely to the deserving, and paid large sums towards preserving cattle in the districts. He also spends thousands of rupees in private charities and in the cause of education.

Messrs. MEISTER LUCIUS & BRUNING, Ld., have their offices at 32, Hornby Road, Bombay. The firm has been established in Bombay since the year 1903 and deals principally in the aniline and alizarine dyes, artificial indigo, and pharmaceutical products manufactured by Messrs. Farbwerke, vorm. Meister Lucius & Bruning of Hoechst-on-Main, one of the leading firms of the chemical industry of Germany. Formerly their business was carried on in India by agents, and from the year 1899 to 1903 Mr. J. C. R. Nabert acted as such. However, it was thought expedient to form a Joint Stock Company in Bombay for the further development of business in India, and accordingly in the year 1903 the present Limited Company was formed under the able Managing Directorship of Mr. Nabert. The dyes handled by this Company are used in dyeing cotton, wool, half-wool, silk, jute, leather, paper, straw, feathers, etc., and they can also be used in the preparation of inks, soaps, colouring essences, and several other such purposes.

Mr. JOHANN CARL REINFRIED NABERT, the Managing Director of the Company, was born in Germany in the year 1860, and passed through a first class Grammar School, and a Commercial Academy. At the age of 17 he left his native

Mr. J. C. R. NABERT.

country and resided and travelled for 25 years in many different countries in various parts of the world, during which period he gained very valuable information and commercial knowledge. He was acting as a manager for several firms in the Dutch East Indies, Holland, and Germany, and his experience in various kinds of import and export trade is wide and valuable. In 1899 he entered the service of Messrs. Farbwerke, vorm. Meister Lucius & Bruning of Hoechst-on-Main, Germany, who in the same year delegated him as their Agent to Bombay where he is now carrying on the large business of his firm, Messrs. Meister Lucius & Bruning, Ld., very successfully.

Babu NIL MONEY MITTER, C.E., was born at Barda, near Diamond Harbour in Bengal, in the year 1828. He was the son of very respectable parents, belonging to a reputable Kayastha family. Litigation had wasted the family possessions, and Babu Nil Money had to rely on his own exertions for his advancement. His first studies were carried on at the village school, where he showed a remarkable aptitude for mathematics, which laid the foundation of his future distinguished career as an engineer. In 1840, he joined the L. M. S. Institution at Bhowanipur, for the purpose of continuing his studies, and later he entered the Free Church

The late BABU NIL MONEY MITTER.

Institution, where he carried off the highest prizes and scholarships. He attracted the attention of the professors of the Institution and was a favourite with all, including the well-known Dr. Duff, by whose influence with Sir Henry Lawrence, Babu Nil Money Mitter was enabled to enter the Thomason Civil Engineering College at Rurki, in 1851. He was the first student from Bengal to be admitted into that Institution, hitherto intended for the exclusive benefit of students of European descent. Here, he obtained the highest prizes and stood first in the examination of 1852. In the following year he passed the Committee examination with credit and was awarded a special prize of professional books. An appointment as Sub-Assistant Civil Engineer at Calcutta followed, and within a few years he rose to the rank of Executive Engineer. In 1859, he resigned the service and commenced a professional career on his own account; having in view the development of the learned branch of the engineering profession as a line of work for his countrymen. Indeed, in this, as in many other matters, he was a pioneer among the natives of India. He became one of the foremost exponents of Indian architecture on modern lines, and his labours resulted in beautiful edifices, such as the palace of Maharaja Bahadur Sir Jotindra Mohun Tagore, the residences of Babu Kali Kisen Tagore, Rai Nundo Lal Bose and Rai Pasupati Nath Bose, and Babu Kirti Chunder Mitter, the Science Association, the Metropolitan Institution and many other buildings. Sir Alfred Croft, as Vice-Chancellor of the Calcutta University, bestowed a graceful eulogium upon him at the Convocation Meeting of 1895. After alluding to his brilliant career at Rurki and in the public service, he said:—"He was a man of vigorous and independent spirit and after a few years he quitted the service of Government to set up in business for himself. In a short time he rose to a high position among the architects of the metropolis. To the residents of Calcutta it may be said—*Si monumentum quæris, circumspice.* The mansions of many of the wealthy inhabitants of Calcutta, and other important buildings of a public character, bear witness to the originality and success of his ideas." The public life of Babu Nil Money Mitter was many-sided. He was a Municipal Commissioner of Calcutta, Vice-Chairman of the Cossipur and Chitpur Municipality, and Chairman of the South Dum-Dum Municipality, an Honorary Magistrate of the 24-Parganas and Dum-Dum, a Fellow of the Calcutta University, and a member of the Indian Association for the Cultivation of Science. In memory of his mother he established and maintained a school in his native village of Barda. He also established a school at Shambazar which he named after his great friend, Pandit Iswar Chunder Vidyasagar. He was foremost in developing the resources of Madhupur, in the Santhal Parganas, as a health resort. He was highly popular, and his sterling qualities of head and heart, and his integrity, charity and manliness, won the respect of all sections of the community. He had the distinction of being the pioneer Indian engineer on modern lines. His death occurred on the 24th August 1894.

Mr. J. N. MOOKERJEE, son of Mr. T. C. Mookerjee, was born in 1869 at a village near Baraset in the 24-Parganas, and he was educated in his native village school up

Mr. J. N. MOOKERJEE.

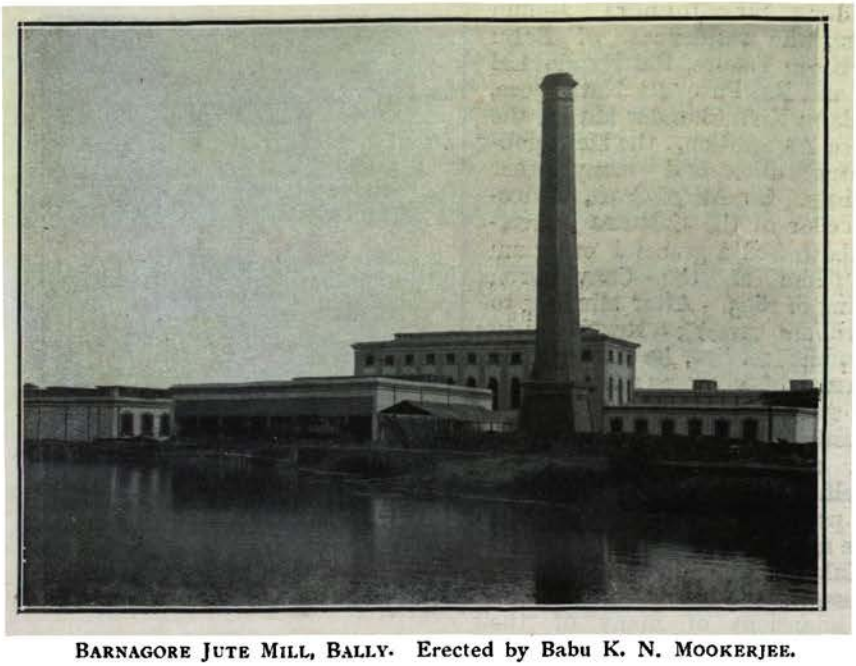
to the age of 10 years. He was then taken to Calcutta and placed in the Sanskrit College. At the early age of eighteen he was sent to various places in Bengal and North-Western Provinces with a well-known contracting firm, under whose guidance he carefully studied for several years the system of water works obtaining there, and obtained a thorough insight into the complicated though useful art of the filtration, preservation and supply of drinking-water for towns.

In 1894 he established the well-known Engineering and Contracting firm of Messrs. Sanyal, Mookerjee

& Co. at Benares, and at present he is a partner of Messrs. T. C. Mookerjee & Co., Water Works and Building Contractors to the Calcutta Municipality, and Proprietor of the extensive brickfields at Kotrung on the Hooghly. He is also a Director of the United Bengal and Assam Pharmaceutical and Chemical Co., Ld.

Mr. J. N. Mookerjee comes of a noble family, and is a gentleman of quiet, amiable and accomplished manners. He is well known for his charitable gifts to the poor and needy.

Messrs. KRISTO NATH MOOKERJEE & Co., Builders and Contractors, 7, Swallow Lane, Calcutta. Established 1902. This firm have earned a high reputation for the general excellence of their work, particularly in the erection of mill buildings and other large work. Within the five years of their existence the firm of K. N. Mookerjee & Co. have built four large mills: The South Alliance Jute Mills at Jagatdal; the Kinnison Jute Mills at Tittagarh; the Naihatty Jute Mills at Hajinagore; and the Barnagore Jute Factory (new mills) at Bally. They have also completed the construction of the extension of the North Alliance Jute Mills at Jagatdal, and the South Barnagore Jute Factory at Barnagore. The firm undertake all descriptions of building work. Since the establishment of the firm a separate department has been inaugurated for execution of orders for supplies of all descriptions. The sole proprietor of the firm is Babu Kristo Nath Morkerjee.



BARNAGORE JUTE MILL, BALLY. Erected by Babu K. N. MOOKERJEE.

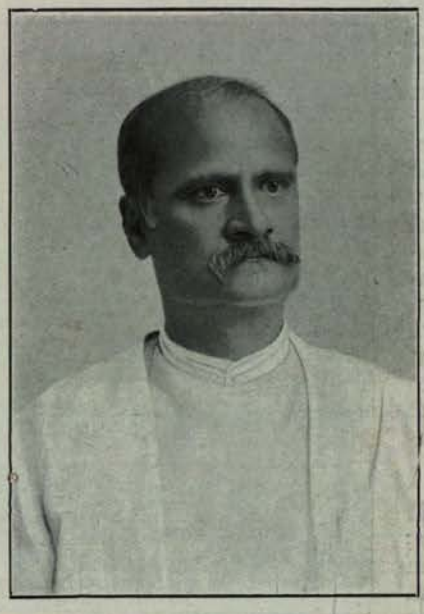
Babu KRISTO NATH MOOKERJEE, sole proprietor of the firm of Kristo Nath Mookerjee & Co., was born at Bhadracaly in 1847 and educated at Utterparah and Barrackpore Government Schools. On leaving school he joined Government service, and spent several years in official appointments and in the service of the East Indian Railway Company. His inclination did not, however, tend in the direction of clerical service, and he joined the building trade in Calcutta in 1881, when he was employed by Messrs. K. L. Mookerjee & Co. as overseer of works. In this capacity he personally superintended the construction of nine filter beds at the Pulta Water Works. He was also employed as overseer in the construction of the Jubilee Bridge at Hooghly, which was entrusted to Messrs. K. L. Mookerjee & Co. In the service of the same firm he also supervised the construction of many bridges and overbridges on the Eastern Bengal State Railway. After the death of Babu K. L. Mookerjee and the consequent separation of the firm of S. C. Mookerjee & Co.,

Babu KRISTO NATH MOOKERJEE.

Babu K. N. Mookerjee carried out much work under the latter firm; but in 1902 he severed his connection, and started business on his own account. Babu Kristo Nath Mookerjee was personally known to the famous engineer, Sir Bradford Leslie, who gave him the following testimonial, dated 1887:—"Babu Kristo Nath Mookerjee has been known to me since the year 1881, having had charge of many petty repairs and additions I have had made to the Beehive at Tittaghur, and I have great pleasure in certifying that he is a very civil, intelligent, and industrious man, and well acquainted with all descriptions of building operations."

Rai Sahib B. C. CHATTERJI, the present manager of the firm of Messrs. K. N. Mookerjee & Co., was born at Barrackpore in 1856, and is an under-graduate of the Calcutta University. He joined the Military Accounts Department in 1878, in which Department he obtained promotion to the gazetted ranks. In 1894 his good services were recognized by Government with the title of Rai Sahib, and when he left Government service he had

attained the position of Deputy Examiner. He joined the firm of Messrs. K. N. Mookerjee & Co.,

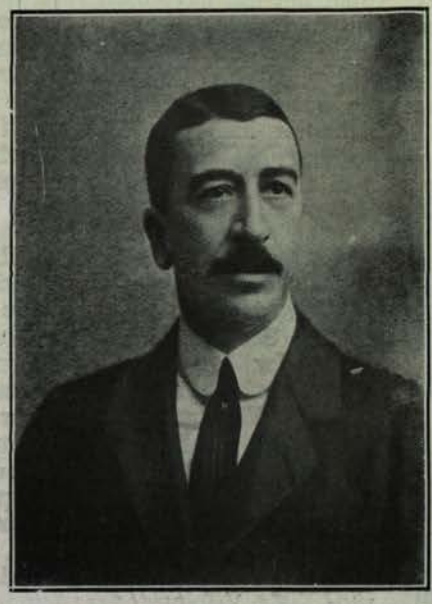


Rai Sahib B. C. CHATTERJI.

in 1904, shortly after his retirement from Government service.

Mr. STEWART BULLEN MOULTRIE, Agent, Bank of Bengal, Delhi, was born at Bombay in 1872. He is the son of the late G. W. Moultrie, Agent at Bombay for the Bank of Bengal, who joined the Bank in 1852 and retired on pension in 1881. Mr. S. B. Moultrie was educated at Rugby School, England. He entered business life in the Manchester and Salford Bank, Limited, at Rochdale, Lancashire, in the year 1891. In 1893 he entered the service of the National Bank of India, Ld., in London, and in 1896 proceeded to Calcutta to join the Bank of Bengal. He has been connected with this institution ever since, and has acted as its Agent at various branches. He became Acting Agent at Delhi in March 1907.

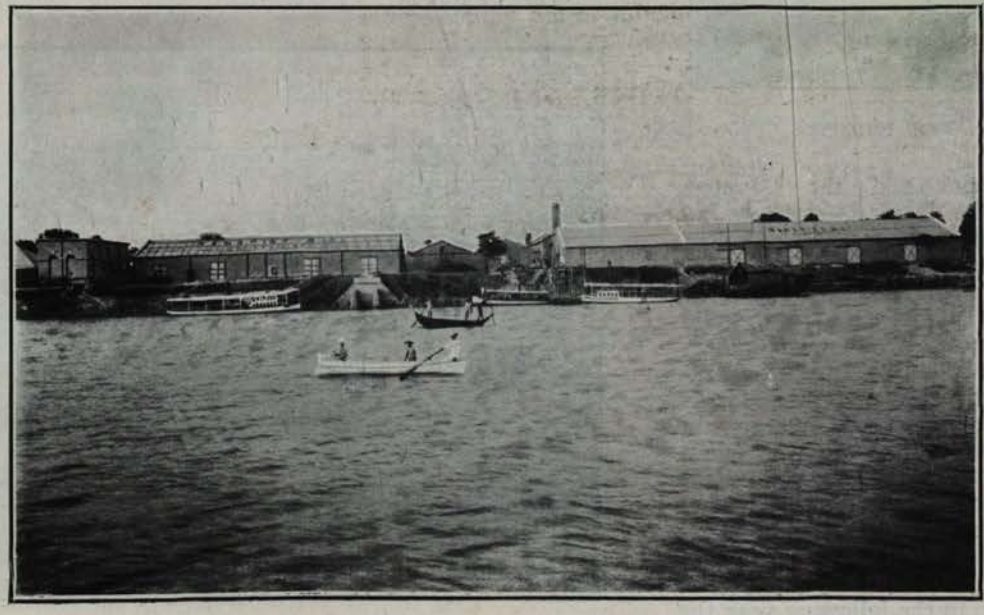
Mr. R. L. MORGAN, of the firm of Messrs. Landale and Morgan, Jute Brokers, first arrived in India in the year 1880, to join his present



Mr. R. L. MORGAN.

firm, and on the retirement of Mr. D. Morgan in 1890, became the senior partner. The firm is one of the oldest jute brokers' establishments in Calcutta, and in addition to a large business in baled jute for export, it has agencies all over the jute-growing districts for the supply of raw material to the local jute mills and balers.

Messrs. NAHAPIET & CO., Jute Merchants and Balers, Postgollah, Dacca. This business was established in the year 1896 by Messrs. Thad. S. Nahapiet and Abraham Lucas, and was carried on by them in equal joint shares for the first year, when Mr. Nahapiet purchased his partner's rights and became the sole proprietor. For several years the business was carried on as a cutcha baling affair, but owing to the energy and business capacity of the proprietor, and his personal friend and Calcutta agent, Mr. Thaddeus Mesrope Thaddeus, one of the leading jute brokers of Calcutta, it increased to such an extent that Mr. Nahapiet was able to arrange for the purchase of a complete set of pucca pressing plant and machinery in 1905; and since that time the firm have been packing pucca baled jute under the well-known mark, P. A. This development has been attended with great success, in conjunction with the original cutcha baling business. The impetus thus afforded to an already successful business has caused it to assume large dimensions; so large, that the premises have been extended, new blocks of godowns built, and a complete extra pressing plant has been added to the existing machinery. Mr. Nahapiet also owns a



Messrs. T. S. NAHAPIET & CO.'S JUTE FACTORY.

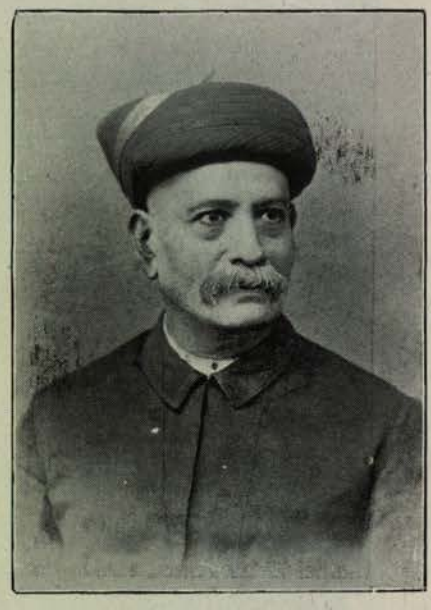
jute business, with cutcha baling plant, in Narainganj, which is carried on in conjunction with his Dacca business. These premises are known as the Goodnail premises and were originally acquired, by purchase, from Mr. A. Lucas in 1900. In the management of his ventures Mr. Nahapiet has been ably assisted by his manager, Mr. H. M. Shircore, who still works under him in the same capacity.

Mr. THADDEUS SETH NAHAPIET, Sole Proprietor of Nahapiet & Co., was born at Julpha, Ispahan, Persia, in 1866 and came to India as a boy in the early eighties. He was educated at the Calcutta

Mr. T. S. NAHAPIET.

Boys' School and the Doveton College. On leaving school he obtained an appointment in a shellac manufacturing concern. This business did not suit him, and after three years he joined the jute trade as an assistant to the well-known pioneer in jute, the late Mr. Abraham Lucas, who, with Mr. Marcar David, was one of the first men in the jute field. He served Mr. Lucas at several stations in East Bengal, for three or four years, when he was admitted as a working partner with Mr. Lucas, who at the same time gave him his daughter in marriage. In the following year the firm of Nahapiet & Co. was started jointly by Messrs. Nahapiet and Lucas, and worked alongside Mr. Lucas' own premises. This business was subsequently acquired by Mr. Nahapiet. In 1903, through the influence of Mr. T. M. Thaddeus, Mr. Nahapiet was asked to work the pucca baling business at Narainganj, carried on under the style of Messrs. M. Sarkies & Sons. Under Mr. Nahapiet's energetic management, this concern rapidly assumed a degree of prosperity that could not but have been very pleasing to its proprietors. He eventually handed it over to Messrs. Finlay, Muir & Co., who now work the business. Since that time Mr. Nahapiet has devoted himself to working his own business, which is in a highly successful and prosperous condition.

Messrs. NARANDAS RAJARAM & Co., 2, Dean Lane, Fort, Bombay; established in 1860. Dealers in Cotton, Seeds, Iron, and Wheat. Agents for Cotton Mills, Ginning and Pressing Factories. Partners, Messrs. Vijbhucandas Atmaram, Maganlal Thakoordas, Ramdas Narandas, and Purshotamdas Thakurdas. Of two former partners, Mr. Narandas Purshotamdas retired from the firm in 1895, and Mr. Rajaram Govindram died in 1894. Mr. Vijbhucandas Atmaram, the senior partner of the firm, also retired on the 18th October 1906. Mr. Purshotamdas Thakurdas solely manages the firm's cotton business, while the other partners devote their attention to the seed and press business. The firm was



Mr. VIJBHUCANDAS ATMARAM.

established for the purpose of carrying on business in the above-mentioned commodities, in which a very large and profitable trade has been done for nearly half a century. In addition, the firm have taken up agencies for the following Joint Stock Companies: The Sarasvati Mills, Ld., Bombay (spinning only); the Mofussil

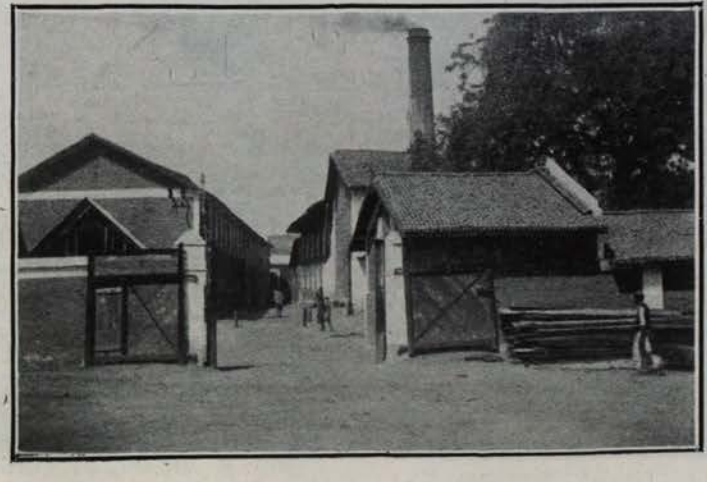
SARASVATI MILLS.

Cotton Manufacturing Co., Ld. (Broach); the Surat City Press Co., Ld. (Surat); Ginning and Pressing Co., Ld.; the Broach City Press Co., Ld. (Broach and Agra), (ginning and pressing); the Mahuva City Press Co., Ld. (Mahuva), (ginning and pressing), the Amreli Press, Factory; the Junagadh Press Factory; and the Sarasvati Mills, Ld., Bombay. The mills were originally owned by the National Spinning and Weaving Co. of Bombay, which went into liquidation in 1895. Messrs. Narandas Rajaram & Co. purchased the mills from the liquidators in that year and formed a Limited Company for the purpose of working them. The mills had passed through many hands before coming into the possession of the present Company, and were originally built when the Bombay mill industry was in its infancy. At the time of their acquisition by the Company, there were only 15,200 spindles in running, but in 1896 the Company added 5,000 spindles and preparation costing Rs. 3,00,000, with a view to reducing the cost of production. For the first few years, owing to bad times consequent on famine and plague, the Sarasvati Mills, in common with the mill industry of Bombay, had a very severe ordeal to pass through. The energy of the Managing Agents kept the concern going through the period of depression. With the improved times of the last few years, however, the Company's affairs have taken a prosperous turn. The capital debt is now nearly discharged, and the mill and machinery have been got into thoroughly efficient condition. There are about 800 hands in the employment of the Company. The Mofussil Cotton Manufacturing Co., Ld., of Broach, another concern in the Agency of Messrs. Narandas Rajaram & Co., owns one of the first mills built in India, by Mr. London. After passing through many vicissitudes, and changing hands frequently, it was acquired by Messrs. Narandas Rajaram & Co., who converted it into a limited liability company in 1895, with a capital of Rs. 6,00,000. Since that period it has steadily advanced in prosperity, and nearly all the old machinery has been replaced by new and up-to-date machines. For the last ten years the concern has regularly paid fair profit on capital. The whole of its output finds a market in the country. There are about 600 men in the employ of this Company.

Messrs. W. H. NEBEL & Co., Custom House Road, Bombay, Merchants, established in the year 1875. Head Office, Leipzig (Germany). Branches, Lyons (France), Bombay, Delhi, Cawnpore, Amritsar. Agencies throughout India, China, Australia and Africa. Sole Proprietor, Mr. W. F. Nebel. The firm principally imports piece-goods and all kinds of general merchandise, and now commands an extensive business. Mr. John Glaeser, Manager of the firm in Bombay, came to India in the year 1896 to take charge of the Bombay Office as Manager, and he still continues in the same position.

Mr. J. GLAESER.

Mr. ARTHUR HILLS GLEADOWE-NEWCOMEN, C.I.E., V.D., A.-D.-C., F.R.G.S., F.S.A. (*Lieut.-Col., U. P. Light Horse*), Cawnpore, was born on the 9th November 1855, in Ireland, and educated at Ripon and Durham School. Mr. Newcomen came out to India in 1873, and joined Messrs. Begg, Sutherland & Co., as an assistant. He left the firm and engaged in the opium, indigo and tea industries, but in 1882 he left these pursuits to accept a position under Government in the Public Works Department. From this service he retired in 1882, to join the firm of Messrs. Cooper, Allen & Co., Cawnpore, in which he rose to a partnership, which he still retains. At the time of his retirement from the Public Works Department he was Assistant Director-General of Railways at Simla. Mr. Newcomen did good work as President of the late Commercial Mission to Persia and was rewarded for his services with the Companionship of the Order of the Indian Empire, and the thanks of H. B. M.'s Government, conveyed through the Governor-General in Council. He is a volunteer of high standing, being Lieutenant-Colonel Commanding the United Provinces Light Horse, and is an Aide-de-Camp to the Viceroy.



MOFUSSIL COTTON MANUFACTURING CO., LD.

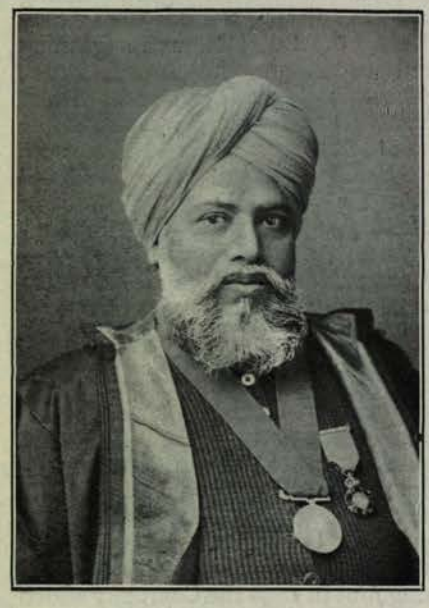
He has been a volunteer since 1872. Mr. Newcomen has been a great traveller. In 1901 he visited Pretoria, South Africa; in 1895 and 1898 he was in Egypt; and in North Burma in 1903-4; also at different periods he has made journeys

Lt.-Col. A. H. GLEADOWE-NEWCOMEN.

of much interest in South China, Japan, Siam, the Malay States, and Ceylon. He has devoted much of his leisure to sport, cricket, polo, hockey, football, big and small game shooting, hunting, pig-sticking and general sport. His Clubs are E. I. United Service and Sports, London.

NEWAL KISHORE PRESS, Steam Printing and Lithographic Press, Hazratganj, Lucknow. Proprietor, Munshi Prag Narain Bhargava.

These large printing works were founded in 1858 by the late Munshi Newal Kishore, C.I.E., who lived to develop and carry on the business till 1895. The works, godowns, etc., occupy a very considerable area at Hazratganj, and no expense has been spared in equipping them with the latest printing and steam machinery. They do a very extensive business, giving employment to about 500 men. The works are specially equipped for printing in all the vernaculars of India, and experts are retained who can handle any of the local languages, Arabic, Persian, Urdu, Sanskrit, Hindi, Mahratti, Urya, Punjabi, etc., besides English. In consequence, work flows in from all parts of India, as well as from foreign countries, such as Persia. A daily vernacular paper, "The Oudh Akbar," is also published from the press. The press do their own type-casting, having modern machinery for the purpose of casting type in various languages. They also do electro-typing and stereo-typing, and all processes necessary for their work. Lithographing is a speciality. They also print all descriptions of educational works at prices which place them within reach of the very poorest. There are branches of the press at Lahore, Allahabad and Cawnpore. The Lucknow Iron Works, established in the year 1899, also belong to the same proprietor, Munshi Prag Narain Bhargava. These works are large and well found, giving employment to about 300 hands. General iron work is excellently turned out, and a speciality is made of steel trunks and cash boxes. There is a foundry attached where iron-casting work is executed. The Lucknow Iron Works are large contractors to Government. At the death, in 1895, of Munshi Newal Kishore, C.I.E., the founder of the Steam Printing Works, these were inherited and carried on by his son, Munshi Prag Narain Bhargava, above alluded to as the founder and proprietor of the Lucknow

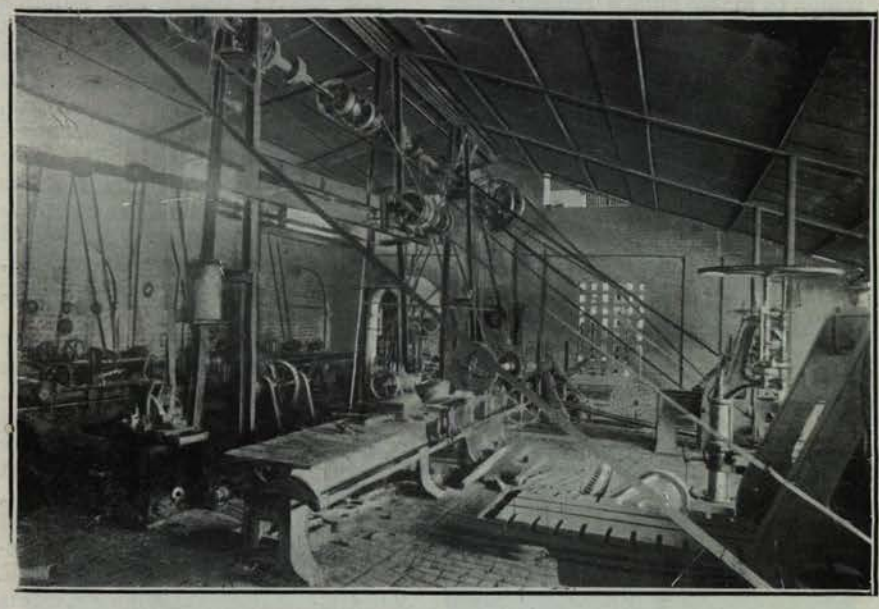


The late Munshi NEWAL KISHORE.

Iron Works. Munshi Prag Narain was born at Allahabad in 1872, and educated at the Jubilee High School, Lucknow, whence he proceeded to the Canning College to complete his studies. On leaving College he served his apprenticeship to his father. On the expiry of his apprenticeship he joined his father

NEWAL KISHORE PRESS, LUCKNOW.

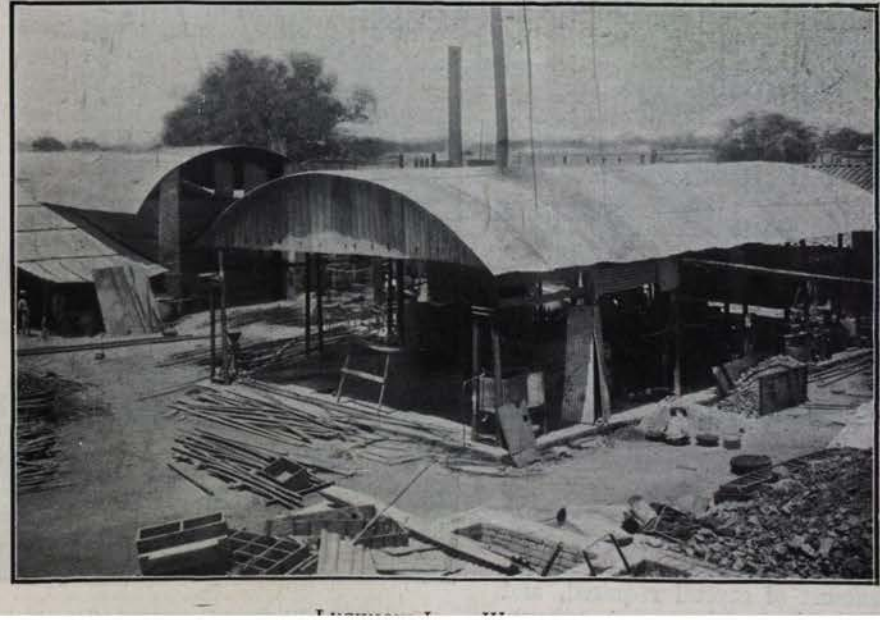
in the printing business he had established, and in his other ventures. The Munshi is a large landed proprietor, having inherited the ancestral property. His zemindaries in the districts of Aligarh are very extensive, and he has a palatial residence at Aligarh. He owns considerable personal property in land in the districts of Gonda, Barabanki, Unao, and Hamirpore, where, being an ardent and progressive agriculturist, he carries out extensive experiments in the cultivation of field and garden produce. Recently he has started an experimental garden in Lucknow. In business, Munshi Prag Narain's connections are very extensive. Besides being the proprietor of the Newal Kishore Steam Printing Works and the Lucknow Iron Works, he also carries on a banking business to facilitate his large operations, extending through the United Provinces. He is also a Director of the Upper India Paper Mill Co., Ld., a concern of which his father, Munshi Newal Kishore, C.I.E., was the founder. He is a member of the Upper India Chamber of Commerce, an honorary magistrate, a director of the Bharuara Commercial Bank, Jubbulpore, a trustee of the Agra College, and member of the Municipal Board. He is also proprietor of the Newal Kishore Ice Factory at Lucknow. In his various works he gives employment to upwards of 1,500 men. Munshi Prag Narain is the compiler of the Sahifai-Zarrin (golden book), which he published in 1903. This is a splendid Indian biographical work, containing 2,000 biographies and 500 illustrations, and is issued in a style highly creditable to the publishers.



LUCKNOW IRON WORKS.

Mr. GOVIND PERSHAD BHARGAVA, son of the late Babu Ram Sawak, younger brother of Munshi Newal Kishore, C.I.E., was born in 1877, and educated at Lucknow and Agra. After leaving school, Govind Pershad entered the engineering profession, and having

MUNSHI PRAG NARAIN BHARGAVA.



perfected himself was appointed manager of the Lucknow Iron Works in 1899, which post he has capably filled ever since. The works, which give employment to about 300 men, form an entirely Indian industry, no Europeans being employed. They make a speciality of bolts, rivets and nuts, as well as steel trunks, cash boxes, etc. They do a large contract business with railways. Mr. Govind Pershad is a member of the Society of Engineers, England.

The NORTH-WEST SOAP Co., Ld. One of the most interesting features of modern India is the progress made in arts and manufactures. Of these latter, one of the most striking is soap, and when soap is mentioned, the name of the North-West Soap Manufacturing Company naturally comes first to mind. The difficulties to be overcome by the pioneers of an industry of this description are not easy to realise, except by those who have actually experienced these difficulties. It is beside the mark to say that the experience and workshop practice of the Western world are ready to hand; for to start a factory in India is a vastly different matter to starting one in Europe. In the first place, skilled workmen have literally to be created out of a raw material, so ignorant, so prejudiced, so different from anything to be found anywhere else in the world, that the task often seems impossible. Then, again, there is the climate. India with a climate ranging from intense cold to extreme heat, sometimes exceedingly dry, and at others surcharged with humidity, presents unexpected difficulties to the manufacturer, particularly to him whose business it is to make soap. Bearing these facts in mind, the phenomenal rise of the North-West Soap Company must be looked upon as no mean achievement, and as reflecting great credit upon those who adventured their capital and endowed the enterprise with their brains and skill.

The concern was originally started as a private enterprise at Meerut in 1879. The original promoter miscalculated the amount of capital required, and his funds soon becoming exhausted, a few friends, European and native, came to his aid, and raising the sum of Rs. 75,000 registered the business as a limited liability company. Thus was initiated the attempt to make highly refined toilet

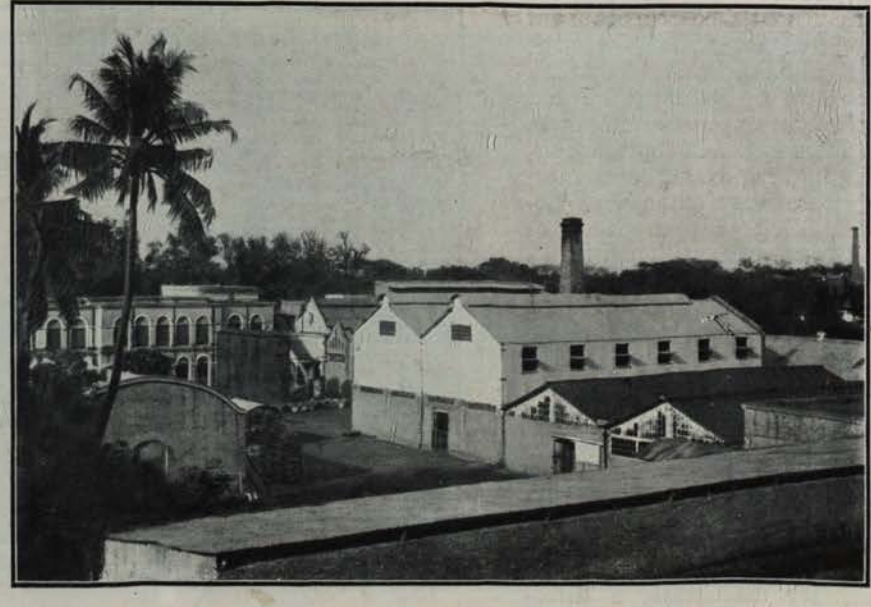
The late Mr. A. E. SHORTER.

soaps in India after modern European methods. Soap, of a kind, had been made in India for centuries; but anybody who has had the misfortune to come across Dacca or Amritsar soap will doubly appreciate a change that has evolved the fragrantly-scented, delicate, and refined toilet soaps now turned out by the ton from the factories of the North-West Soap Company.

The Meerut Works are situated conveniently near the main line of the North-Western Railway and have their own private siding. The design of the factory is a square, the block on the west being occupied by the offices, while that on the north forms residential quarters for the staff. The other two sides comprise the factory proper, and consist of stores, soap-boiling, candle-making, stamping, packing and despatching departments.

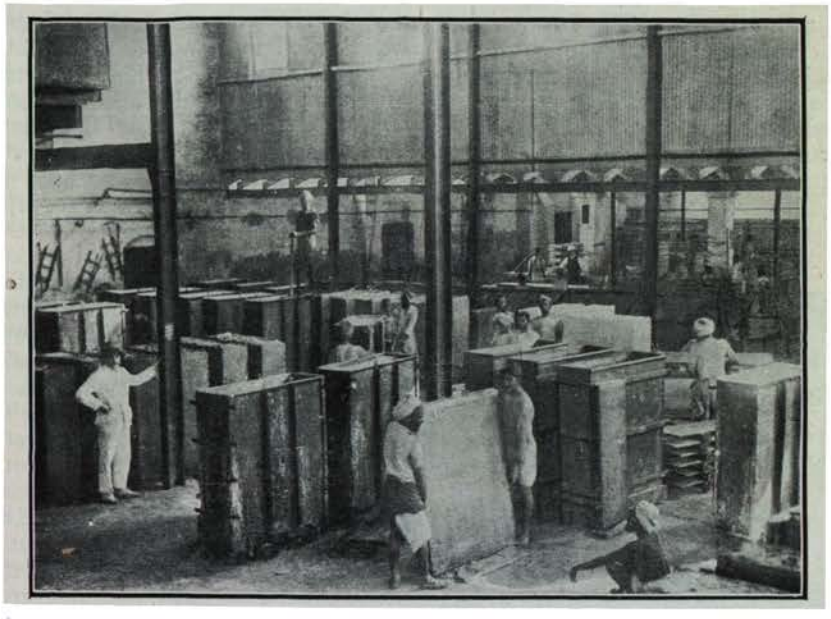
From its inception the Company was successful, and although the quality of the soap has been constantly improved by tireless experiment, the first output of the factory was of the highest class. At the Calcutta Exhibition of 1883-84, the Company gained the only Gold Medal awarded for soaps manufactured out of England. The late Mr. A.E. Shorter, then General Manager, was in charge of the exhibit, which consisted of soaps manufactured by himself.

The high quality of the North-Western Soaps soon attracted a wide demand, and in consequence, the Meerut Works had to be repeatedly extended, and the capital of the Company was twice increased. Still, the facilities were not sufficient,



N.-W. SOAP COMPANY'S CALCUTTA FACTORY (EXTERIOR VIEW).

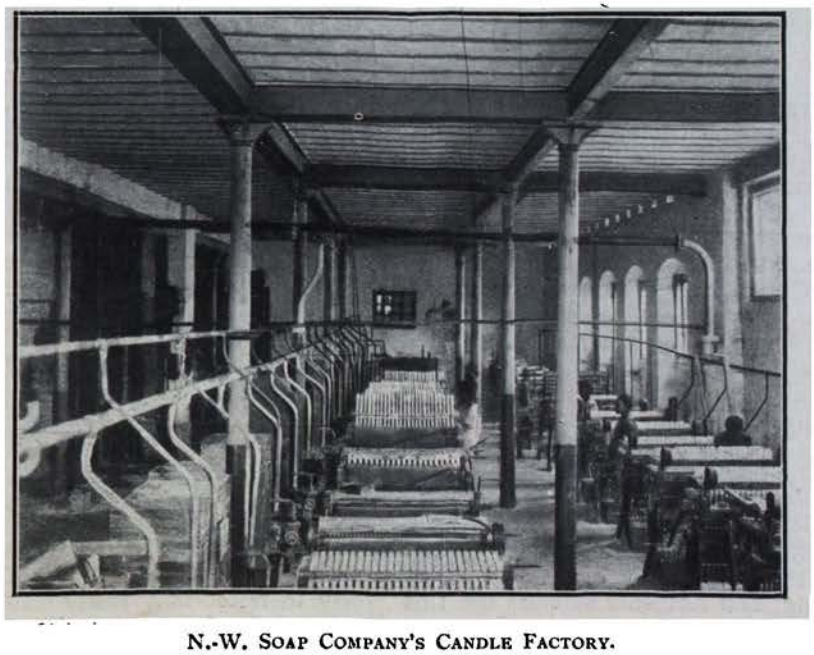
and in 1893, just ten years from the date of the Calcutta Exhibition, and fourteen years from the founding of the Company, the Calcutta factory was started on a small scale on a plot of ground, secured by Mr. Shorter, on a portion of the estate of the late King of Oudh at Garden Reach. The uniform success attending the operations of the Company



N.-W. Soap Company's Soap Factory.

were again manifested in the Calcutta factory, which has been thrice enlarged, necessitating two increases of capital, which now amounts to eleven lakhs of rupees.

The Calcutta factory was erected on lines similar to the Meerut premises, the buildings standing on four sides, forming a large quadrangle convenient for carrying on out-door work, and for storing casks, cases and other items not liable to injury from the weather. The offices are situated on the north of the quadrangle, and may be seen in the centre of the first picture, the upper floor being used as residential quarters. The soap-boiling house stands immediately behind the offices. In a corner of this building is a lofty platform, from which the manufacturer is able to direct the operations of soap-boiling. These operations are conducted in enormous vats, in which are placed the ingredients for soap-making. On completion of the boiling, the mixture is run through large pipes in the sides of the boiling vats, into a mixing machine, wherein the soap is cooled down. In the case of soaps for toilet purposes, the colour and perfume are here added. From these mixers the soap is run into huge boxes, made of plates of iron clamped together, in which it is allowed to remain for three to four days, or until quite cold, when the clamps and side plates are removed and a brobdignagian block of soap is revealed, standing on the bottom plate which rests on iron wheels, enabling the finished block to be run to any part of the factory for cutting up. If the soap is of household description, it is cut into bars by an ingenious machine and allowed to dry in open piles, when it is ready to pack in cases for delivery. Toilet soap passes through a more elaborate style of cutting, and is dried in a room heated to a rather higher temperature than the hottest chamber of a Turkish bath. The pieces are then stamped into tablets of various shapes, usually with the Company's name on one side and the name of the soap on the other. Next to the boiling-house is the cutting and stamping room, where the tablets are cut and stamped as above described. Adjacent to the stamping room is the packing room, where the tablets are put up in suitably labelled cases of various shapes and sizes. The Toilet Soap milling room, a very important department, is devoted to the manufacture of the highest class of toilet soaps. These are made from edible oils and fats, carefully clarified, and boiled with the requisite chemicals, resulting in a white curd soap which is cut into shavings by machinery, all the

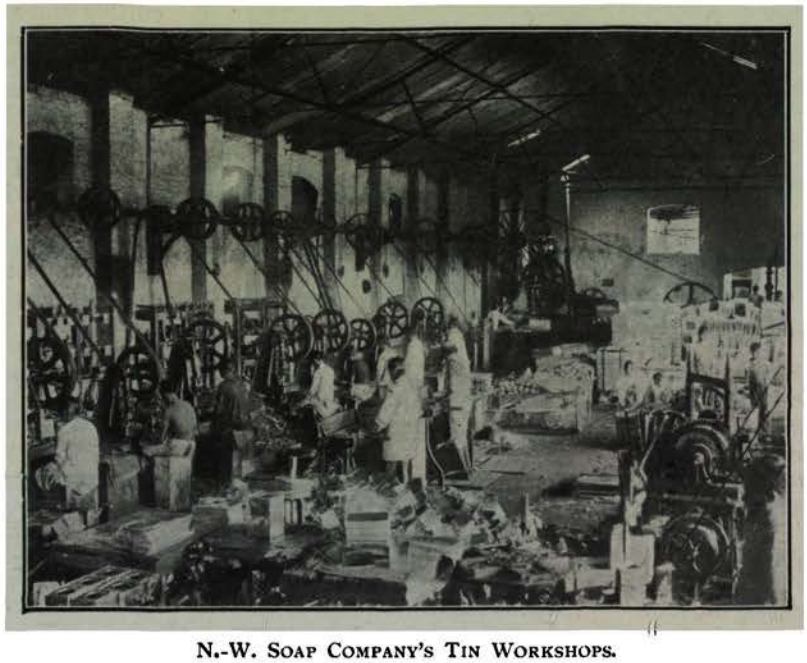


N.-W. Soap Company's Candle Factory.

surplus moisture being evaporated in the drying room, till the soap is of the nature of dried chips. These are ground in a mill, between granite rollers, until a stiff, homogeneous paste is produced, which again is forced by a machine of enormous power through interchangeable mouth-pieces, according to the shape of tablet required. It emerges in a continuous bar, which is cut off into suitable lengths, to be pressed into artistic shapes in powerful screw-presses. The resulting tablets are wrapped in artistic wrappers of various designs, and packed in suitable boxes, lined with lace paper and neatly labelled.

Candle-making forms another branch of the Company's business, the materials being largely produced on the premises. Glycerine, which is so largely used in toilet preparation, is made at the factory, being a by-product of fats and oils. The Company has a complete installation for clarifying and concentrating the "wifeet water" which contains the glycerine. The Company have installed a cool-chamber, where tallow is pressed to remove the oil (the hard portion or wax being the only item which is required for candle-making), so that the operation need not be discontinued during the hot weather on account of excessive temperature. The candle-moulding, a very interesting branch of the Company's business, which is carried on in a separate room, forms the subject of one of the accompanying illustrations.

Tin, card, and wood box-making is a branch of the Company's business which is carried on as a separate department under the name of the N.-W. Box Manufacturing Company. It is conducted in a separate building, and not only supplies the tins and boxes required by the Soap and Candle Company, but has also an extensive clientèle throughout India. Here, boxes for every conceivable purpose are turned out. Tins for tea, coffee, jam, preserved-fruit, tobacco, cigarettes, arrowroot, tooth-powder, blacking, leather-polishes, etc. Card board boxes for millinery, tailoring, haberdashery, boots, cigarettes, cheroots, etc. Wooden boxes, and every description of packing cases, for forwarding goods by rail or post. The factory has a complete plant of up-to-date machinery for the rapid manufacture of boxes, including a set of wonderful nailing-machines, by means of which the sides and bottoms of wooden boxes are nailed together very speedily, as many as six nails being driven home at one time, when required. Every branch of the Company's business is under skilled European supervision, and in charge of men who have gained expert knowledge of their business in the best manufacturing concerns in England and Europe. The other employés of the Company are entirely natives of India. The capital has been largely subscribed by Indian shareholders, and by far the larger part of the material used in the manufacture of soap and candles is of local production. The Company therefore may justly claim to be a real Swadeshi enterprise of the best kind.



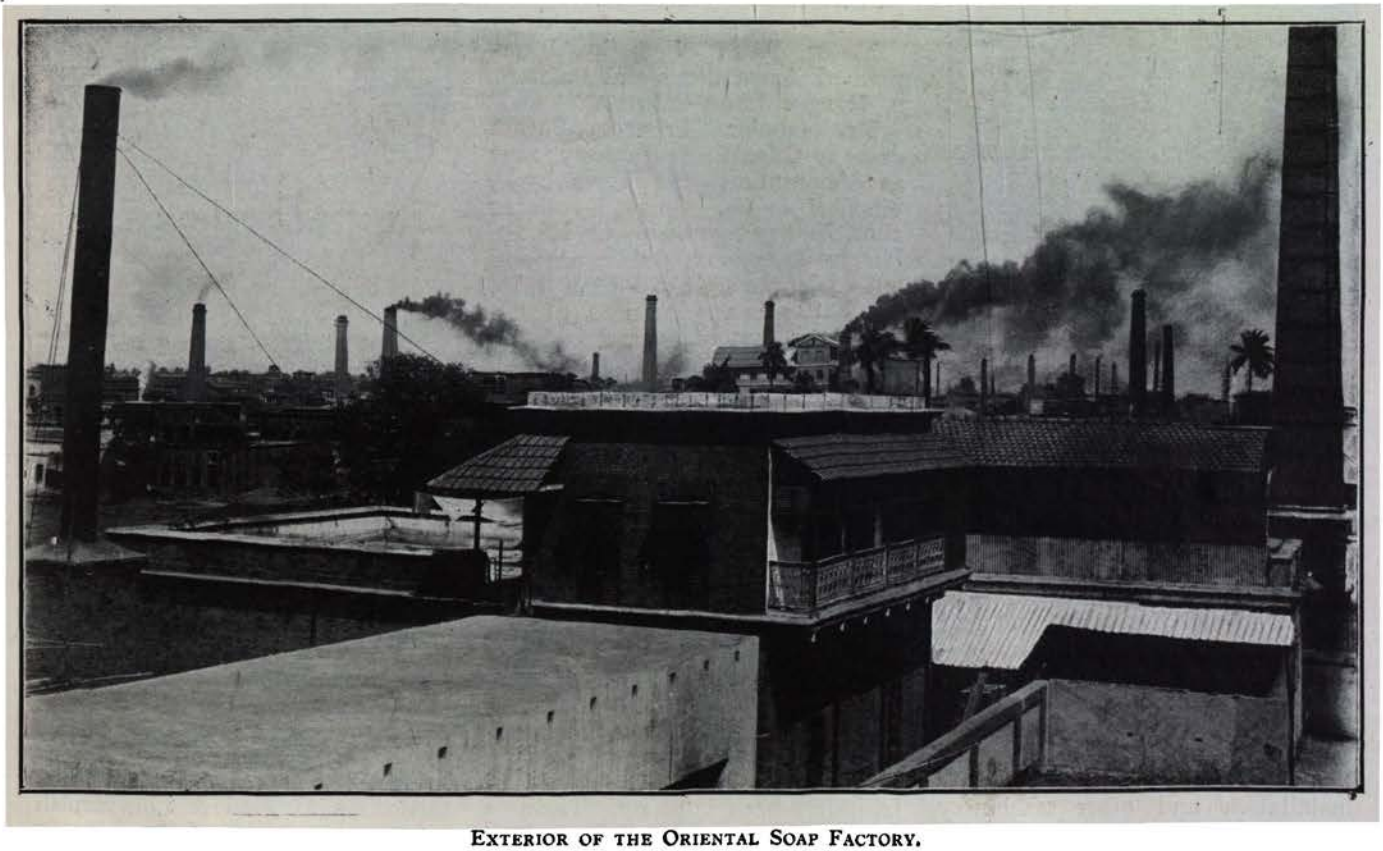
N.-W. Soap Company's Tin Workshops.

The NORTH-WEST TANNERY Company, Limited, Cawnpore. Established in the year 1893. Head Office, Cawnpore, with agencies throughout India. London Agents, Allen Brothers & Company, 14, Devonshire Square, Bishopsgate Street. The Company and its Factory was first started in the year 1891 by Mr. E. Foy, with the co-operation of Mr. Bond; and in the year 1893 the concern was turned into a limited liability company with a nominal capital of rupees ten lakhs, subscribed capital 5¼ lakhs. The Company employs over 1,230 hands, and its factories and premises occupy 35 acres of land on the banks of the Ganges. The Company is the largest retail maker of leather goods in the East, and manufactures throughout with the latest and best English and American machinery, while every department is controlled by European experts. Besides being tanners and curriers, the Company manufactures bags, trunks, portmanteaux, Gladstone bags, suit cases, courier and brief bags, belting, harness, saddles, boots, shoes, travelling requisites of every description, and military equipments. The leather used is tanned and curried in the Company's own factory, on exact English principles and by the latest scientific methods, and is absolutely free from the objectionable smell, common to practically all country productions. Each article produced is subjected to a severe and searching examination before leaving the Factory. The Company has seriously recognized the importance of attaining strength and durability in the preparation of all its goods, and exercises the greatest care in the selection of all material employed, buying hides and skins in all parts of India, from Peshawar to

Cape Comorin. In short, from the Re. 1-12-0 shoe to the State harness worth Rs. 15,000, each and every article manufactured by the Company, compares very favourably with a similar article made anywhere else, quality for quality, and better value for the prices charged. For the convenience of its constituents, the Company has opened a special branch for repairs of all kinds carried on in an efficient manner.

The Company has amongst its other customers His Majesty The Amir of Afghanistan, and almost every Native State in India, and has also an extensive connection amongst Regiments, Railways, and Municipalities; besides, a very large business amongst all classes in India, including the leading State Officials and other Officers, both Civil and Military. The outturn of the Factory has steadily increased year after year, and the Company is at present working in a very thriving condition.

The ORIENTAL SOAP FACTORY, Calcutta. This concern was established in the year 1906 and is furnished throughout with the most up-to-date French machinery for the manufacture of toilet soap and soaps of all description. The process carried on at the Factory under capable experts embodies the latest and best methods of manufacture as carried out in the famous soap manufactories of France. In a very short space of time the soaps made at the Oriental Factory found such favour with the public that the management had to import and install additional machinery for making toilet soaps and extra plant for bar soaps. The total outturn of the Factory by these means has been raised to 2,000 lbs. per day of toilet, and 1,000 lbs. per day of bar and other commercial soaps. The factory buildings are all new and have been specially erected. They are situated at Goa Bagan, Calcutta. The products of the Factory have met with striking success, and its affairs are in a very flourishing condition. No pains are spared to ensure the future success of the Factory, and to maintain the standard of excellence of its manufactures, and to this end the management have deputed a young man of considerable talent to visit Paris where he is acquiring a knowledge of the latest and most improved modes of soap-making as carried on in one of the largest soap factories of Paris. The Oriental Soap Factory in order to effect the printing of its own labels, etc., in the best style has established a printing press named the "Paragon Press" where high class printing is carried out. The Factory has been awarded many medals and certificates in various parts of India for its soaps. The Proprietress is Srimati Hemnalini Chowdhurani, and a gentleman from Paris acts as chemist and consulting expert. Superintendent, B. C. Ghosh; manager, D. C. Ray; assistant manager, P. N. Chakravarty; boiling supervisor, P. K. Chakravarty; machine master, S. C. Muzumdar; despatcher, S. Biswas. There are about 50 workmen and others employed at the works. Representatives for Branch Offices:—For Burma and the Far East, H. Gupta; for Madras and Ceylon, J. Gupta; for Bombay, Messrs. K. B. Sen & Co.; for the United Provinces and the



EXTERIOR OF THE ORIENTAL SOAP FACTORY.

Punjab, P. Chakravarti; for Dacca, Messrs. M. L. Dey. The Managing Director is Mr. P. N. Roy Chowdhury. The capital invested amounts to Rs. 1,00,000.

Messrs. M. OSTERMAYER & Company, Merchants and Agents, 3, Elphinstone Circle, Bombay, were established in the year 1891 by Mr. M. Ostermayer. They have a branch in Madras, 169, Devaraja Modelly Street. Mr. M. Ostermayer retired in the year 1898, when Messrs. G. Ostermayer and H. Heberlein took over the firm. It deals principally in dyes, representing the well-known firm of Badische-Anilin and Soda-Fabrik, Ludvigshafen on Rhine, Germany, the

Mr. G. OSTERMAYER.

inventors and manufacturers of alizarine and aniline dyes and other chemicals, supplying the same all over the world. They have also manufactured the "Artificial Indigo" for the last seven or eight years. The firm also represents Brunner, Mond & Company, Limited, Northwich, England. It supplies to mills and other dye-houses all the dye-stuff and the chemicals required in the process of dyeing, bleaching, printing, etc. The firm designs dye-houses either separately or in connection with mills or other kindred industry, and supplies the complete installation and other machinery required by the mills. The firm is a member of the Bombay Chamber of Commerce.

Mr. G. OSTERMAYER, partner in the above firm, was born in Germany in 1871. He was also educated there, and after passing the military training was engaged with Messrs. G. L. Gaiser, Merchants, Hamburg, in the year 1891-2. He was then connected with Messrs. S. Albrecht & Company, of Manchester, for a year, was in the south of Germany for three years, and then joined the Badische-Anilin and Soda-Fabrik for three months, and afterwards came to India in the year 1893 to join Messrs. M. Ostermayer & Company. Mr. H. Heberlein joined the firm in the year 1892. He was born in Germany, and was educated partly in Germany and partly in Switzerland. He gained his commercial knowledge and experience in different Banks in Switzerland, Germany and England. He was also connected with different commercial houses in Europe. He came to India in the year 1892 as an assistant in the firm, and was made a partner in the year 1898.

Messrs. PATTON & Co., Incorporated Accountants and Auditors, 2, Mangoe Lane, Calcutta.

Mr. Lauder Primrose Patton came to Calcutta in January 1892 as Accountant to Messrs. Lyall, Marshall & Co. On 1st November 1897, he began practice at No. 2, Mangoe Lane, as a public accountant under the style of Patton & Co. Mr. Patton is an associate of the Society of Accountants and Auditors (Incorporated 1885), London.

Messrs. BUTTO KRISTO PAUL & Co., 7 & 12, Bonfield's Lane, Calcutta. This well-known firm was founded by Babu Butto Kristo Paul, and is at present owned by him, and his son, Babu Bhut Nath Paul. They are wholesale and retail chemists and druggists and importers of patent and proprietary medicines and surgical instruments. Their head office is in Bonfield's Lane, Calcutta, and they have branches all over the town. From the smallest beginning, a business which is the largest in the line in the whole of India has been built up. There is hardly another Bengali firm which has attained the same eminence or enjoys the same reputation and popularity as the firm of Butto Kristo Paul & Co. Babu Bhut Nath Paul was compelled to discontinue his studies at an early age to join his father's business, which even then had grown so much as to be impossible of efficient management by Babu Butto Kristo Paul alone. This event marks an epoch in the history of the firm, for from the moment Babu Bhut Nath Paul took his seat behind the counter, success came in with a rush and the business began to increase by leaps and bounds, and it is well known that the present unique position of the firm is due to his undoubted genius, single-minded devotion, and re-

Babu BUTTO KRISTO PAUL.

markable business acumen. The magnitude of the business and the great reputation it deservedly enjoys for its honest and straight-forward dealings have secured for it the distinguished and (to a Bengali) rare honour of Viceregal patronage. Messrs. Butto Kristo Paul & Co. have over 300 assistants in their employ, and are the manufacturers of many indigenous drugs and chemicals, which have found an extensive circulation throughout India. The boundless trust and confidence which the big European and American business-houses repose in Messrs. Butto Kristo Paul & Co., furnish incontestible proof of the honesty

and integrity which characterize their transactions with them. In fact, it may be said without exaggeration that they have, by their straightforward dealings, aided in the removal of obstacles which stood in the way of freer intercourse in business between Bengalis and Europeans.

In private life both father and son are examples to their countrymen. They are orthodox Hindus, and though they are acknowledged leaders of their community; they still retain the simple and quiet ways of their early life, and everything they do is characterized by an entire absence of ostentation. Though they give full scope to their generous impulses, the world at large knows very little of the extent of their extensive charities.

Messrs. PEAKE, ALLEN & Co., Manufacturing and Dispensing Chemists and Aerated Water Manufacturers, Lucknow. Established in the year 1851. Besides being wholesale chemists and manufacturers of aerated waters on a large scale, the firm do a considerable general business as importers, photographic suppliers, etc. They are also auctioneers in a large way of business, and also deal largely in furniture. During the past five years the firm have largely extended their business, and their building at Lucknow, with its extensive frontage, is one of the finest in the city. They employ several Europeans and about fifty native employees. Their wholesale catalogue circulates all over India, and leads to a very large business. Mr. John Albert Banyard, the present head of the business, has been associated with the firm for the past 20 years and has conducted it himself for the last five years. He is a qualified chemist and acquired his experience in England.

Messrs. B. K. Paul and Co.'s New Building.

Messrs. PAXTON & Co., Boot and Shoe Manufacturers and Importers, Allahabad. This firm was originally established in Calcutta in the early sixties by the late Adam Paxton, but was removed to Allahabad in the year 1869. Mr. Adam Paxton carried on the business till his death in 1900, when he was succeeded in the proprietorship by his two sons, Messrs. George and Evelyn Paxton, and his daughter, Miss Kate Paxton, who inherited the business. Messrs. George and Evelyn Paxton are the active managers of the firm's affairs. They manufacture high-class hand-sewn boots and shoes, walking, riding, shooting, and all descriptions of men's foot-gear, and in this department they employ some 30 skilled workmen who have all been trained in the business of manufacture by Messrs. Paxton & Co. Their manufacture of hand-made boots and shoes is a special line, and they do a very extensive business, not only in India, but with Hong-Kong, Singapore, Penang, Burma, and with England. They are also large importers of harness, saddlery and sporting goods. Both the managing partners are thoroughly practical men in their line of business, having received their training with their father. Mr. George Paxton, Managing Partner in Messrs. Paxton & Co., Allahabad, was born at Simla in the year 1863 and educated at schools in Simla and Calcutta. On leaving school he joined his father in the business of Paxton & Co., in which he has remained ever since. He has devoted a great deal of time and attention to Freemasonry, having been initiated in 1885 in Lodge "Independence with Philanthropy," E. C. 391, and has been Treasurer since 1900, succeeding his father in that office. He was previously Secretary from 1886 to 1900. He

passed through the various Chairs and was installed Master of the

Mr. George Paxton.

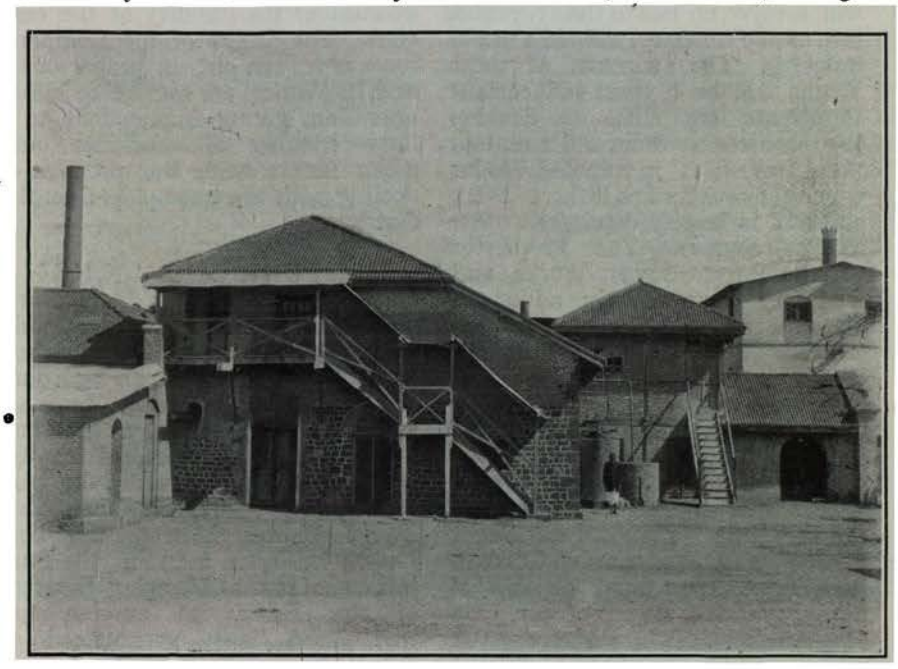
Lodge on 18th December 1900. He became a Mark Mason in the year 1886. He is Grand D. J. Overseer, District Grand Lodge of Bengal. He was exalted to the degree of Royal Arch Mason in the year 1887, and has served in all three Chairs—1st, 2nd and 3rd, and is P. D. G. 1st Assistant Sojourner in D. G. Chapter of Bengal. He has taken the 18th degree and has been through the various Chairs. Mr. Evelyn Paxton, the second partner of Paxton & Co., was born and educated at Calcutta and joined his father in business after leaving school.

PIONEER CONDIMENT Company, Calcutta, Head Office and Factory, 37, Beniatola Lane, Calcutta; Show rooms, 173, Dhurrumtollah Street, Calcutta; manufacturers of the celebrated "Manuva" Brand Indian condiments, jams, jellies, chutneys, preserves, marmalades, syrups, sauces, pickles, cheeses, curry powders, peppers, vinegar, etc. To this business the Company have recently added the preparation of barley, arrowroot and similar food stuffs, specially prepared for the use of infants and invalids, and they make a speciality of Indian fresh fruit preserves. The preservation of the delicacy of flavour of tropical fruits has long presented difficulties, and the subtle flavours of the special fruits of India are lost in the act of preserving unless special knowledge and skill is brought to bear. The Company have surmounted these difficulties, and put up, in hermetically sealed tins, preserves of Indian fruits which are specially attractive as retaining the characteristic flavour of the fresh article. The Pioneer Company have attained a well-deserved reputation for the preparation of the numerous descriptions of curry powders which are peculiar to the country. The same may be said of their Indian sauces of which they manufacture many special varieties. Their vinegar has been declared, after analysis, to be the best produced in India. The syrups made by the firm have obtained high repute and are used by many of the local dispensaries, which fact sufficiently attests their purity and excellence. In the preparation of barley, arrowroot, etc.,

Pioneer Condiment Co.'s Stall at the Calcutta Exhibition.

Pioneer Condiment Company's Factory.

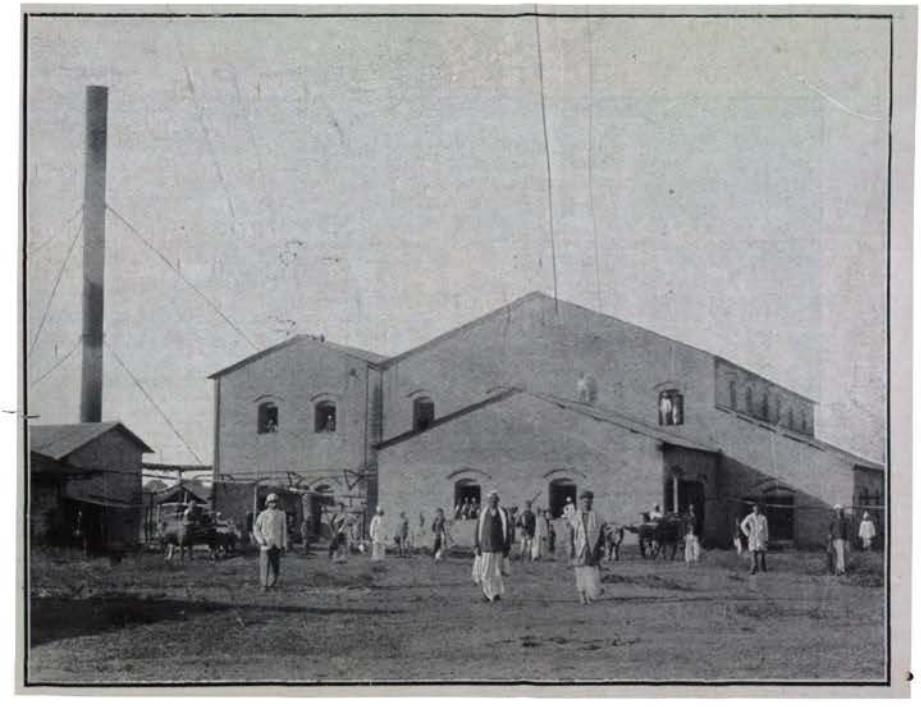
the Company have been very successful. The raw material is grown on lands belonging to the Company, and the preparation is carried out in the most cleanly and scientific manner by automatic machinery.



THE POONA SUGAR WORKS AND RUM DISTILLERY.

The produce is untouched by hand. These preparations have come largely into use for domestic and hospital purposes. The operations at the Pioneer Condiment Company's Factory are carried out on up-to-date hygienic lines under the direct supervision of Dr. Haridhan Dutta, an experienced specialist in sanitary matters. An expert is also entertained by the Company, whose business is the selection of the best fruit in the most wholesome condition. The Company have gained many gold medals and highest awards at the various Exhibitions wherein their goods have been displayed. At the Calcutta Industrial and Agricultural Exhibition, 1906-7, their stall of exhibits attracted much favourable attention. The business of the Company is growing rapidly, and the popularity of their preparations is not confined to India. Large quantities of their manufactures are exported to Europe, China, Japan, Australia and America.

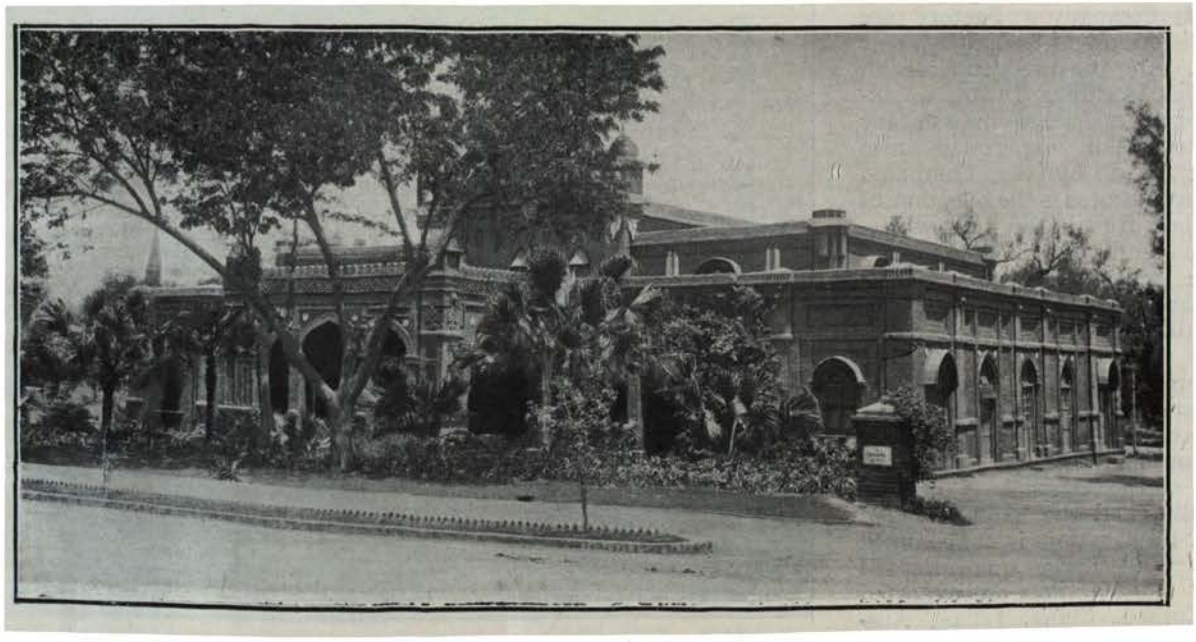
The POONA SUGAR WORKS AND RUM DISTILLERY. This concern was established in the year 1882 by the late Mr. Adurjee Dorabjee Ghaswalla. Shortly after the starting of the Works, Government, through its Abkari Department, placed restrictions on the manufacture of spirits in the district, with the result that the operations of the Factory were paralysed, and it was found impossible to work under the new conditions laid down. This state of affairs continued for a long time, to the great loss of the Proprietor, until the arrival at Poona of the son of the founder of the concern, Mr. Kaikhosru Adurjee Ghaswalla, Barrister-at-Law, whose biography appears elsewhere. Mr. Ghaswalla, junior, undertook the task of obtaining better conditions from the Government and set about the work with all the legal knowledge at his command. With the help of Sir James Monteath, K.C.S.I., he was enabled, after careful negotiations during which he handled the subject with great skill, to obtain the removal of some of the most rigid restrictions. The partial revocation of these stringent rules enabled Mr. K. A. Ghaswalla to re-establish the Factory in circumstances which afforded a better opportunity for transforming it into a prosperous concern. Accordingly, under his direct super-



THE GAEKWAR SUGAR WORKS AND DISTILLERY.

vision, operations were again commenced and hopeful signs for the future of the industry soon showed themselves. Since that time the Factory has continued to do good business. The Works are situated at Mundhwa, some six miles out of Poona, and are fitted with machinery of a modern pattern. They are on a large scale and equal to a daily output of four tons of sugar, and four hundred gallons of rum. The sugar manufactured is of the best quality in all the various grades produced. The molasses, remaining after the extraction of the sugar, is subjected to a process of careful clarification, by which all refuse is eliminated, and is then utilized in the distillery. The rum distilled therefrom is of a very fine quality, and compares favourably with the best produce of the West Indies. The Factory affords employment to about two hundred operatives, who are employed in the various departments. The sugar produced at the Works is mostly contracted for by the 'Supply and Transport' Department, for the use of British troops in India. It cannot, however, be said that the Abkari Department of the Bombay Presidency has done anything out of its way to help the local industry, but it is hoped that with the recent change in the Abkari policy, and the industrial revival now in progress in this country, the Government will be able to afford additional facilities, particularly as the granting of them will involve no loss to their revenue, but, on the contrary, will aid a useful industry. The success of these Works will be a great inducement to private capitalists to develop the resources of India and maintain 'local industries' in commodities for which the country has hitherto been, and still is, largely dependent upon foreign sources. The Proprietor of the Poona Sugar Works and Distillery has recently added to his enterprise by purchase of the "Gandev Sugar Factory" from His Highness the Gaekwar of Baroda, with certain concessions. This acquisition has added much to the importance of his operations as the capacity of the latter named factory is much in excess of that of the Poona Works. The Gaekwar Sugar Factory, which is situated in Guzerat, is equipped with plant capable of dealing with an output of ten tons of sugar daily. When taken over, it was lying idle for want of efficient management and expert supervision. The Gaekwar Sugar Factory has been transformed into a 'Limited Joint Stock Company,' entitled the "Gaekwar Sugar Works and Distillery Co., Ld.," with the late Sir Jamsetjee Jeejeebhoy, Bart.; Hon. Sirdar Nowrojee Pudumjee; Messrs. Vijbhucandas Atmaram, J.P.; F. S. Chenoy and K. A. Ghaswalla as Directors. A Board so ably represented guarantees the stability of the concern. The affairs of the Company have now been put in proper order and its Works are soon to be in full operation, giving employment to a large number of workmen, and going far to solve the problem of dealing with the unemployed in the district.

The PUNJAB BANKING Company, Limited, Lahore, which is well and favourably known by means of its branches, established almost throughout India, first commenced business at Lahore, Punjab, at the end of 1889, with a subscribed capital of Rs. 2,50,000. Founded by that enterprising spirit, Sir (then Mr.) David Parkes Masson, the best known business man in the Punjab, who is the Managing Director of the Bank, its success may well have been pronounced as a foregone conclusion. The energy which Mr. Masson threw into the work is borne out by the history of the Bank, which is a record of steady progress, as evidenced by its Balance Sheet and Report of the



THE PUNJAB BANKING CO.'S OFFICE

Directors, to 31st December 1906, showing as it does:—

CAPITAL.

Paid up shares, 2,000 @ Rs. 100 each,	Rs. 2,00,000.
Partially paid up shares, 500,	Rs. 25,000.
Total	Rs. 2,25,000.

REVENUE FUND.

Fixed deposits	Rs. 85,13,698-9-9
Floating Deposits	Rs. 23,18,364-4-6
Total	Rs. 1,08,32,062-14-3

As a practical proof of the soundness of the Bank's business may be adduced the net profit of Rs. 41,850-1-9, being over 18 per cent., or at the rate of over 36 per cent. per annum on the paid up capital. If to the above be added the balance of Rs. 38,125-5-3 carried from the previous year, it will show a profit of Rs. 79,975 at the credit of Profit and Loss Account, thus furnishing an idea of the business transacted by the Bank through its branches and Head Office.

Founded in the capital of the Punjab, the Bank has used all its opportunities to the best advantage in advancing its interests and expanding the business in that Province, and in those parts of India closely connected with the Punjab.

Besides its Head Office in Lahore, it has seven branches in the Punjab, *viz.*, Lahore Cantonment, Dalhousie, Ferozepore, Jullundur, Mooltan, Sialkot, and Simla. Beyond the Punjab, in the North-West Frontier Province, it has three branches, *viz.*, Peshawar, Nowshera, and Abbottabad; one in Karachi, the natural port of the Punjab; one in Quetta; and one in Srinagar, Kashmir, which has also a Sub-office in Gulmarg during the season.

Due mainly to the exertions of the Managing Director, the Bank, on 30th June 1890, only eight months after its start, had as its working capital nearly nine lakhs, which has kept increasing year by year until it now stands at the respectable figure of one crore and fourteen lakhs, a good criterion by which to gauge the Bank's standing.

The experience of the Directors has firmly impressed upon them the importance of maintaining an adequate Reserve; and, the shareholders being satisfied with a moderate dividend, a Reserve Fund, which now amounts to four lakhs, has been formed, and this has been entirely made up from surplus profits.

The Present Directors of the Bank are:—

The Hon'ble Sir David Parkes Masson, Kt., C.I.E.; Lala Jai Nath; Lala Narsingh Das, W. Muir Masson, Esq.; and W. McDonald Masson, Esq.

The Auditors are Messrs. Meugens, King, and Simson, Chartered Accountants.

Sir DAVID MASSON (*Lieut.-Colonel, 1st Punjab Volunteer Rifles*), Managing Director of the Punjab Banking Company, Limited, is a Scotsman, and was born in Rossshire in 1847. After a short trial of a

Lieut.-Col. Sir DAVID MASSON, KT., C.I.E.

solicitor's office in Edinburgh, he adopted banking as his profession, receiving his training in the Commercial Bank of Scotland's Head Office in that city. With ten years' experience of banking he came to India in January 1872, as Manager of the Lahore Branch of the defunct Punjab Bank, Limited. On that institution going into liquidation three years later, Sir David (then Mr.) joined Sir (then Mr.) James Walker, the late Sir (then Mr.) William Rattigan and the late Colonel Arthur Cory in starting the "Civil and Military Gazette" as a daily paper in Lahore, he and Colonel Cory being joint managing proprietors for many years, the same partnership in the meantime having also purchased the "Pioneer" of Allahabad. Early in 1887 Sir David joined the staff of the Alliance Bank of Simla, Ld., as Agent at Rawal Pindi and Murree—a temporary strengthening of the staff of that Bank to enable Sir James Walker, then manager, to take two years' leave to Europe. The taste for the old profession revived, and in 1889 he founded the Punjab Banking Company, Limited.

As a youth, Sir David was connected with various Edinburgh charities, as secretary or treasurer, and he joined the volunteer force there in his seventeenth year. Thus was laid the foundation of his public and volunteer services in India, both of which he took up without loss of time on his arrival in this country. Several of the charities which he founded in the early seventies, in co-operation with the then Chaplain of Lahore, the Rev. Baldwin, still flourish—the Cathedral Free School and Orphanage being a specially successful and useful institution. At a later period he was one of the originators of the Pasteur Institute at Kasauli, and the first Treasurer of the Fund. He has rendered valuable services to Government as Secretary and Chairman, respectively, of two Punjab Famine Committees, and also as Chairman, Secretary, or member of various other important committees. On three occasions he has been nominated to the Legislative Council of the Punjab, resigning in 1907 on temporarily leaving the Province.

But it is perhaps in volunteering matters that Sir David has been most before the public. He has been a volunteer for over 40 years, filling various ranks from private to Commandant in the 1st Punjab Volunteers, holding the latter rank for 15 years and being still an active volunteer, though nominally on the Supernumerary List. His honours in this connection have been numerous; the V. D., A. D. C. first to the Commander-in-Chief and later to the Viceroy and Governor-General, and the C. I. E. In 1905 these were crowned by a Knighthood.

Messrs. RICHARDSON & CRUDDAS, Byculla Iron Works & Bombay Metal Mart, Bombay. This firm was founded by the late Noble Carr Richardson in 1857 under the name of Richardson & Co. His sons, William, Noble, and George Richardson joining him as partners in 1869, 1872 and 1875 respectively. The founder of the firm retired in 1879, and Mr. John Cruddas was taken into partnership, the firm becoming Richardson and Cruddas. Mr. George Richardson died in 1882, and Mr. Cruddas retired the same year.

In 1886 the remaining partners admitted into partnership were E. H. Elsworthy, W. G. Wilson and G. F. Horbury; and in 1902 H. L. Richardson; Mr. Elsworthy retired in 1905 and Mr. Wilson in 1907. The partners now carrying on the business are William Richardson, Noble Richardson, G. F. Horbury, M.INST.C.E., and H. L. Richardson, A.M.INST.C.E.

The firm from a modest beginning over fifty years ago has now the largest Engineering business on the western side of India. Their principal works, with the Bombay Metal Mart and Offices at Byculla, occupying over 50,000 square yards, and their branch works at Nesbit Road, Mazagon, Bombay, another 12,000 square yards, or a total area of thirteen acres. They employ over 2,000 men supervised by a European staff of over forty assistants principally selected from the foremost Engineering establishments in England.

The firm have in each of their two works foundries capable of dealing with the heaviest castings required in the trade, Pattern Shops, Smithy, Fitting and Machine Shops, and large structural departments, all replete with the most modern machinery, including hydraulic and pneumatic plants, and they have turned out some of the largest steel bridges ever made in this country. One of these, the Connaught Bridge of five spans each 156 feet long, total length being 780 feet, was opened by H. R. H. The Duke of Connaught in 1903. Besides steel bridges of all sizes for railways and roadways, they make large quantities of steel well curbs, caissons, roof trusses, etc., etc., amounting to thousands of tons yearly, principally for the Government of India and to the India Office specifications.

The reputation of the firm is of the highest, as is evidenced by their receiving orders for this class of work from all parts of India, Burma, Ceylon, East Africa, Straits Settlements, etc.

The firm have also a Sanitary Department under an English expert Assistant, and are Agents for Messrs. Doulton & Co., Lambeth, London, whose stoneware pipes and fittings they stock. They have supplied and fitted them to a large number of public buildings, the Viceregal Lodge, Simla, several Native Princes' palaces, and they are at all times ready to give quotations and suggestions for this class of work.

The firm are proprietors of the Bombay Metal Mart, where they stock for sale several thousand tons of English and Continental rolled beams of all sections, steel plates and sheets, angles, tees, flat and round bars, galvanized corrugated iron sheets and roof fittings, cement, portable and stationary engines, pumps and machinery fittings of all kinds.

The two Works and Metal Mart are well worth a visit, and the firm are always pleased to show any one interested in such works over them.

The corresponding firm is Richardson and Hewett, London, E.C.

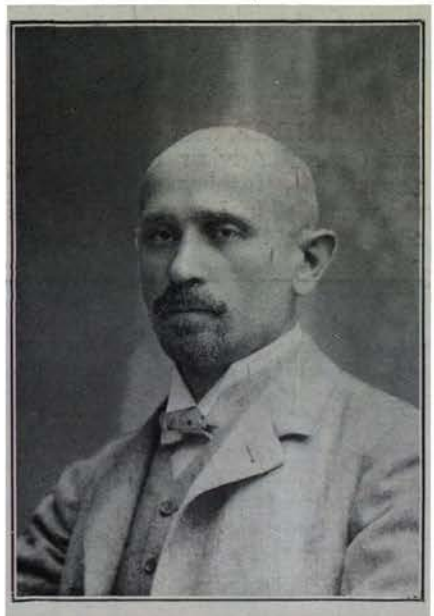
CONNAUGHT BRIDGE.

Messrs. A. ROBERTSON & SON, Reed and Camb Manufacturers, 1-1, Mission Row, Calcutta. The firm was originally founded by the late Mr. Andrew Robertson and his son, the head of the present firm, in 1884, and had its head-quarters at North Tay Street, Dundee. At first the manufacture of Reeds only was undertaken. The business of

Messrs. A. Robertson & Son was extensive, and large jute mills on the Continent and in India were entirely furnished by the firm. In 1895, the Camb building business of Messrs. James Proctor was bought over by Messrs. Robertson, and the addition of this to the existing works of the firm put them in a position to fulfil all demands made upon them. There was a steady increase in the business of the firm until the year 1901, when Mr. Robertson, with a view to extending the Indian business, entered into a partnership with Messrs. McGregor and Balfour, and a branch was opened at Calcutta early in 1902, Mr. D. W. Melville being appointed manager, and Mr. Watson traveller, to the firm. Mr. A. Robertson took charge of the manufacturing department. This development, however, met with very small success, and it was contemplated, in consequence, to sell off the stock and wind up the business. Negotiations were set on foot for the purpose, when Mr. Robertson asked permission to take over control, and this being granted, a change came over the fortunes of the firm, which has enjoyed a fair measure of success ever since. In consequence of certain misunderstandings between the Indian branch and the home office, Mr. Andrew Robertson, and Mr. Lewis B. Robertson, his son, who joined the branch in 1904, have decided to make a fresh start. With this end in view they have purchased a piece of land in Metcalfe Street, Calcutta, whereon they intend erecting a factory and godown suitable for the conduct of a Reed and Camb Manufacturing and Mill Furnishing business. Mr. Andrew Robertson, whose practical working knowledge of the business extends over a period of 30 years, intends to spare no expense in the erection of the building and the laying down of up-to-date machinery. When completed, the works will be on a level with the very best furnished manufactories in the United Kingdom.

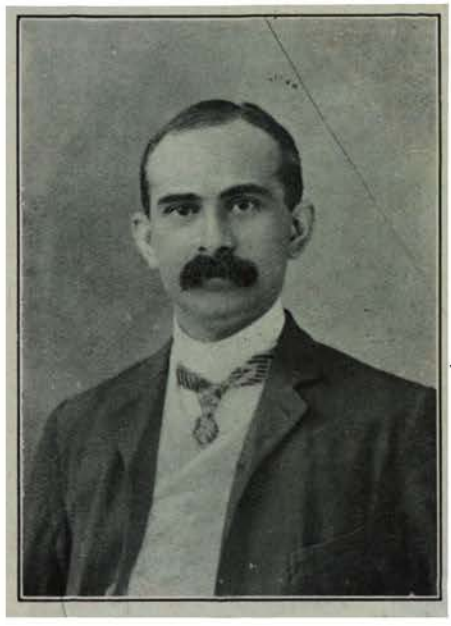
Mr. LEWIS B. ROBERTSON, late Secretary to the McGregor and Balfour Co., Ld., Manufacturers of Reeds and Cambs, No. 1-1, Mission Row, Calcutta, was born in 1884, in Scotland, and educated at a school in Dunkirk, and at W. Stewart Thompson's Academy. In 1903 he joined the Manchester Post Office as sorting clerk and telegraphist. Here he remained for a few months only, and in 1904 he came out to India to join the firm of McGregor and Balfour as secretary to the firm in Calcutta. He is the eldest son of Mr. Andrew Robertson, the late Manager of the works of the Company. Mr. Lewis B. Robertson, and his father, Mr. Andrew Robertson, have since severed their connection with Messrs. McGregor & Balfour, and have started their own firm, Messrs. A. Robertson & Son.

Messrs. ALOIS SCHWEIGER & Company, Limited, Merchants, 10, Forbes Street, Fort, Bombay, established in Bombay in the year



Mr. ALOIS SCHWEIGER.

1901. The firm acted as Agents for many English as well as French business houses for nearly 15 years previous to its establishment in its own premises. It has a branch at Karachi under the management and control of the Bombay Manager. The firm has Agencies in the principal cities in India, such as Calcutta, Madras, Colombo, Delhi, and in the Straits Settlements, at Java, Sourabaya, Rangoon, and does a large business with China, Japan, and South Africa. It deals in import and export trade, principally in diamonds, pearls, precious stones, silk, Manchester piece-goods, Continental piece-goods, sugar, enamelled ware,



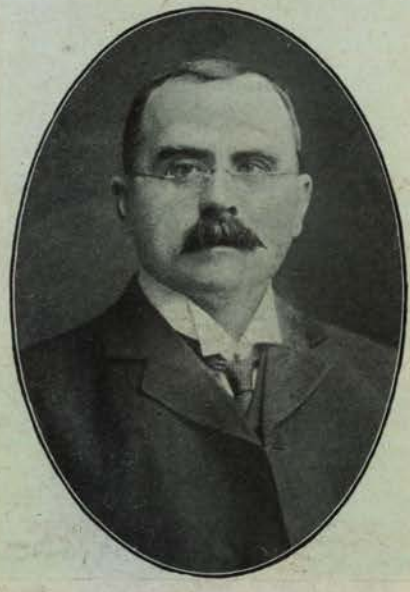
Mr. P. R. PATEL.

hardware, glassware, general provisions, and in many other sundry lines.

Mr. Schweiger carried on business for a number of years as "Alois Schweiger," but recently joined hands with the Creditanstalt, the Austrian Commercial Bank, and now carries on business under the style of "Alois Schweiger & Co., Vienna," its branches being styled as limited concerns. This firm is recognized as one of the largest Austrian firms, carrying on an extensive trade in all parts of the world. Mr. Schweiger was knighted recently by the Austrian Government as "Senior Hochwohlegboren Herrn Kaiserlrath Alois Schweiger." He holds a unique position on the Continent, and takes a leading part in all Government affairs specially relating to commerce.

This firm has its Head Office in Vienna, and Branches and Agencies in Hamburg, Milan, London, Manchester, Paris, and every important business town. Mr. Piroshaw R. Patel is Manager of the Bombay Branch.

Mr. W. B. SHEWAN, Tanner, Currier, and Leather Merchant, Cawnpore. This business was established in the year 1902 by the proprietor, Mr. W. B. Shewan, who makes a speciality of the finer classes



Mr. W. B. SHEWAN.

of leather, such as tan leather in all shades, box calf, and chromed kid skins, black, and in colours, which have created a great demand. Mr. Shewan also produces harness, bridle and gaiter leather of all descriptions. The factory is equipped with the latest developments in machinery, and the processes are the most modern and efficient known. Mr. Shewan makes a speciality of fancy tanning, dressing all kinds of skins for the public, including lizard, snake and crocodile skins, and even rhinoceros hide. He has always a large number of miscellaneous skins in process of preparation, and has received numerous testimonials from his customers. He also carries on the business of a practical taxidermist. Mr. Shewan's experience of his business is of very long standing. He has been 35 years in the leather trade, served seven years' apprenticeship in Scotland, and has made a special study of leather manufacture, on which he is an authority. Of his long career in the trade 20 years have been spent in India. He was one of the founders of the North-West Tannery Co., Ld., of Cawnpore, and the Company's factory was built on plans prepared by him. He was Secretary of this Company for eight years. The leather produced by Mr. Shewan has for many years commanded the highest prices in India, and is well known to the natives in the vernacular as "Soon Saheb-ka-Chamra." Mr. W. B. Shewan was born at Peterhead, Aberdeenshire, in the year 1858, and educated at his native town. He gained his knowledge of the leather trade in Scotland where he served his apprenticeship, and was employed for several years as tanner and currier to Messrs. Cooper, Allen & Co. He left them to join the North-West Tannery Company, Ld., of which he was one of the founders, and subsequently joined G. Wense & Co., whose factory also was built on plans prepared by him, and with whom he stayed two and a half years, leaving them to start his own business.

Mr. REGINALD HAROLD SHOOBRIDGE, Merchant, Agent, and General Adviser to the Bhavnagar State, Kathiawar, was born in the year 1878 in Liverpool, and was educated at the Liverpool College.

Mr. R. H. SHOOBRIDGE.

After finishing his education he served his apprenticeship with Sinclair & Co., Shipowners of Liverpool. He remained with the firm for about six years. In the year 1900 he went to China and joined Patterson & Co., and remained with them for three years. He was stationed at Shanghai, Hong-Kong, and different other towns in China, and

Mr. P. D. SHROFF.

at Singapore. He also represented the firm in Japan and Western Australia. He came to India in the year 1903 when he first visited the southern part, and subsequently visited Kathiawar as an Agent to Turner, Morrison & Co. He afterwards became Agent to Killick, Nixon & Co., and now represents in Kathiawar several commercial firms of both Calcutta and Bombay. In addition to this he is especially engaged by the Bhavnagar State for receiving and entertaining the State European guests on behalf of the Maharaja of Bhavnagar. He takes a great interest in sport in general, and hockey, cricket, riding, pigsticking and shooting in particular. He played cricket with the Southern India Team against the Authentics in 1903.

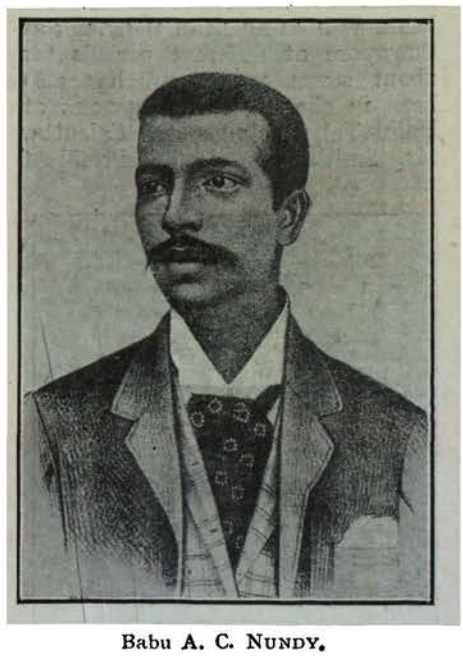
Mr. PHEROZESHAW DHANJIBHAI SHROFF, founder and head partner of Shroff Bros., Bombay, was born at Khetwady, Bombay, in 1852, and was educated at the Elphinstone High School, Bombay. Mr. Shroff had the misfortune to lose both his parents when he was only eleven years of age.

On leaving school he obtained employment with the Government Central Press, Bombay, and remained in that service for nine years, at the expiry of which period he started in business on his own account at Amraoti, where he opened the "Berar Cash Bazar." After running this business for a while, Mr. Shroff took a trip to Europe and visited the commercial centres of England and the Continent, London, Paris, Vienna, etc., on the lookout for novelties. On his return to India he established a joint business under the style of Shroff Bros. From small beginnings he soon raised his firm to a respectable position, and they now do a very large business in crockery, plated-ware, jewellery, cutlery, fancy goods, American novelties, German goods, etc. They hold very large stocks of works of art of all descriptions. The firm have business connections in Ceylon, Burma, Australia and several other countries. Their emporium is largely patronised by tourists and others, as a place where goods as described above may be purchased at reasonable rates. The success of the firm is in a large measure due to the energy and commercial acumen of Mr. P. D. Shroff.

Messrs. PITAMBUR SIRCAR & Co., Cabinet makers, upholsterers, house-furnishers, manufacturers of structural woodwork, timber merchants, etc., 46 & 47, Bow Bazar Street, Calcutta. Established in 1854 by the late Babu Pitambur Sircar. During his lifetime the firm flourished exceedingly and did a large business with Government officers and Railway Companies, as well as with a considerable private clientèle. Babu Pitambur Sircar had a positive genius for business in this line. His son and grandson carried on the business after his death, but the latter took in partners, not finding himself capable of managing the business alone. This led to dissensions, and ultimately the business was disposed off by Sheriff s' sale in 1904. The purchaser was Babu Ashutosh De, who resold it to his maternal uncle, Babu Annoda Coomar Nundy, by whom it is at present carried on as sole proprietor. Under his management the business of the firm has greatly increased. Up to 1904 the firm only carried on the furniture business at their premises, 46, Bow Bazar Street; but Babu A. C. Nundy added the premises, 47, Bow Bazar Street, for show-room purposes, and also a large timber yard for the purpose of executing orders for structural woodwork of all descriptions, besides supplying teak planks, scantlings, logs, beams, railway sleepers, etc. This yard is situated on the Coolia Tangra Road, and is about 10 bighas in extent. The firm now publish an excellently printed illustrated catalogue which is circulated through Bengal, Assam, and other Provinces. The extent of the business with Government, Railways, District Boards and Municipalities, is very considerable, besides which the firm is largely patronized by Indian princes and nobles. A portion of the office furniture for the offices of the new Government of Eastern Bengal and Assam was ordered by His Honour the Lieutenant-Governor from this firm. On the occasion of H.R.H. the Prince of Wales's visit, Messrs. Pitambur Sircar & Co. were entrusted with a large part of the decorations of Calcutta, and carried out their contract to the satisfaction of the authorities.

Messrs. PITAMBUR SIRCAR & CO.'S DESK.

Babu ANNODA COOMAR NUNDY, sole proprietor of Pitambur Sircar & Co., has a widespread reputation as a business man throughout not only Bengal, but



Babu A. C. NUNDY.

Assam, the United Provinces, and the Punjab. He was born in 1866 and was educated at the Sanscrit College and the Hare School, Calcutta, where he acquired a thorough knowledge of English as well as a liberal education in other departments of knowledge. He received his business training with his father and attended to affairs with such diligence that at an early age he was entrusted with the management of the two well-known firms of A. C. Nundy & Co, and Nundy & Friends which he has now conducted with success for about twenty years. He acquired the business of Messrs. Pitambur Sircar & Co., by purchase, in July, 1904.

Mr. THOMAS SMITH (*Captain, Cawnpore Volunteer Rifles*), Agent, Allahabad Bank, Ld., Cawnpore, Vice-President of the Upper India Chamber of Commerce, was born at

Haddington, Scotland, and educated at the Burgh School, where he was medallist, and at the Knox Institute, where he held Bursaries. Mr. Thomas Smith first turned his attention to the law, but subsequently obtained a position in the Royal Bank of Scotland, at Haddington, and discontinued his law studies. In the year 1895 he came out to India to join the Allahabad Bank and served for a time as Assistant at the Head Office. He has now been agent of the Bank at Cawnpore at different periods for about seven years, and has also been in charge of the agencies at Naini Tal, Lucknow and Calcutta. Mr. Smith was elected President

Mr. THOMAS SMITH.

of the Upper India Chamber of Commerce in 1905, and has been Vice-President of that body for two years. He is a Director and Auditor of several Public Companies in Cawnpore and is Treasurer of various societies, and a member of the Institute of Bankers in Scotland. He has been connected with the Volunteer movement for sixteen years, and is a Captain in the Cawnpore Volunteer Rifles. He was ordained an Elder of the Church of Scotland four years ago.

Messrs. SORABJEE SHAPURJEE & Co., Engineers, Bombay; Head Office, 16, Apollo Street, Remington Buildings, established in the year 1850. The London firm is carried under the style of Messrs. Shapurjee and Ratanshaw. The business was first started by Mr. Sorabjee Shapurjee, grandfather of the sole surviving partner, Mr. Shapurjee Sorabjee, in 1850. He established the very first iron foundry and engineering works in India. He also started a flour mill, and was the pioneer of the introduction into India of machinery for the opening and cleaning of wool. The firm now represents Mr. Elijah Ashworth, Manchester, Messrs. John Musgrave & Sons, Messrs. Brooks & Doxey, Limited (late Samuel Brooks), Messrs. Butterworth & Dickenson, Mr. Joseph Stubbs, Messrs. Witter & Sons, and Messrs. Reddaway & Co. Besides the general machinery importing business, its foundries and workshops, the firm are Managing Agents for the Globe Mills, Ld., Bombay. Mr. Shapurjee Sorabjee, the sole surviving partner of Messrs. Sorabjee Shapurjee & Co., is the eldest son of the daughter of Mr. Sorabjee, the founder of the firm. He was adopted by his grandfather and took his name. He passed the Matriculation Examination when he was sixteen years of age. About 1879 he joined this firm and, desiring to gain a practical knowledge of his profession, he left for England in 1884, and entered the works of Messrs. Hick, Hargreaves & Co., Engineers of Bolton, and remained with them for three years. He also joined the evening classes at Owen's College, won the Ashbury Scholarship, and gained first-class honours in Mechanical Engineering at the City and Guilds of London Institute. In 1887 he was enrolled a Member of the Institute of Mechanical Engineers and an Associate Member of the Institution of Civil Engineers. He had the honour of being presented at Court by the then Secretary of State for India. Mr. Sorabjee's firm have supplied to many mills Messrs. Musgrave's engines, boilers, gearing, etc., aggregating a total of 25,000 horse power. Among these are one of 2,500 I. H. P., horizontal compound condensing tooth gearing engines, and several vertical triple and quadruple expansion engines of the Fleming and Ferguson type, with no dead centres. For Messrs. Brooks and Doxey, Ld., he has sold in India a total of over a million of ring spindles. Mr. Sorabjee has already travelled the Red Sea 15 to 16 times,

Mr. SHAPURJEE SORABJEE.

and still finds it desirable to pay more visits to Europe in further developing the important business of his firm.

The STANDARD LIFE ASSURANCE Company, Bombay. A Branch Office of this Company was opened in Bombay in 1876 under the management of Mr. Thomas Lang (since deceased).

Owing to the growth of the business it was considered expedient by the Company to erect a building of their own, and in January 1889 the handsome four-storied suite of offices known as the "STANDARD BUILDINGS" on Hornby Road was opened during the Secretaryship of Mr. George Oliver.

The façade of the building is of blue stone picked out with white, and the arcade over the footpath is ornamented with handsome polished Aberdeen granite pillars. The upper storey is surmounted by a tympanum representing the parable of the five wise and five foolish Virgins, which was carved in the Bombay School of Art from a design sent out from England.

These premises were the first to be erected in India by a Life

Assurance Company, thus giving a lead which has since been followed by several other Life Offices.

An additional single-storied building was also erected by the Company a few years later on an adjoining plot of ground.

The selection of these sites is a tribute to the foresight of the management, as the Company's Offices, owing to the great changes that have taken place in Bombay of recent years, stand in what is now the principal European business centre.

The present Branch Secretary is Mr. F. A. Prevost.

Further details regarding the general history of the Company will be found in Volume No. I.

Messrs. SPEDDING & Co., Timber Merchants and Contractors, established in 1884, with Head Office in Lahore, and works in Jummoo and Kashmir States, and Chamba State. The original partners were H. Mitchell Henderson and Charles Spedding. The latter retired in 1896, and his place in the firm was taken by Mr. J. N. F. Mitchell in that year. Spedding & Co. made the latter portion of the Jhelum Valley Road from Chikoti to Srinagar and the road from Srinagar to Gilgit. During the Hunza Nagar campaign, the members of the firm, by request, took part in the operations, and received the thanks of the Government of India for the assistance they gave. In recent years the business of the firm has been principally confined to the working of extensive forest leases in the above States.

Mr. J. N. F. MITCHELL, of Messrs. Spedding & Co., was born in 1858 in Sanchrie, Ayrshire, N.B.,

Mr. J. N. F. MITCHELL.

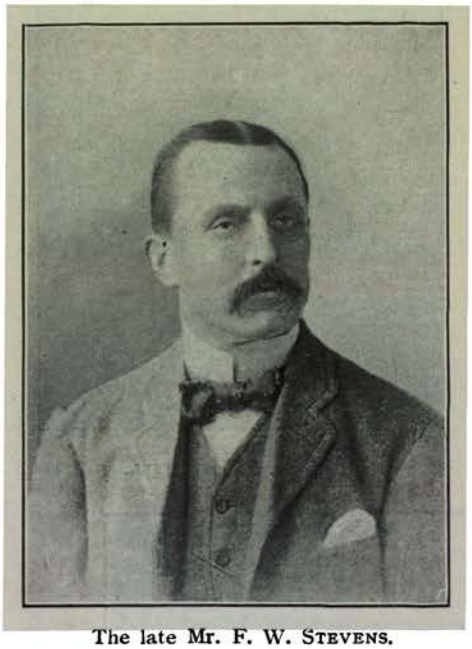
Messrs. SPEDDING & Co.
Showing how timber and cut logs are brought down from the hills.

and was educated at Edinburgh and St. Andrews. He came to the East in 1880, with the intention of becoming a coffee planter in Ceylon, but owing to the bad state of coffee cultivation in the Island during that and the following years, he left Ceylon in 1883. After visiting Calcutta and Agra, he finally settled down in Bombay, establishing the firm of Mitchell & Co., Cotton Agents and Brokers. In 1895, he retired from Mitchell & Co., and in the following year joined his brother in the firm of Spedding & Co., of Lahore and Kashmir.

Mr. HENRY MITCHELL-HENDERSON, senior partner of Spedding and Company, was born in the year 1856 in Scotland and received his education privately. He came to India in 1874 and started tea-planting in Chota Nagpur. This concern he carried on for about six years, when he joined a brother in Calcutta, for a short period, in commercial industries. Led by his mature experience, he persuaded Mr. Charles Spedding, who was an engineer, to join him in contracts, and this served as a nucleus for the present well-known firm of Spedding and Co., Contractors and Engineers in Kashmir.

Messrs. STEVENS & Company, Limited, Architects, Engineers, and Surveyors, King's Buildings, Hornby Road, Bombay, founded in the year 1888 and formed into a Limited Company in the year 1907. Members of the firm are :— Charles Frederick Stevens, B. G. Triggs and T. S. Gregson. The firm was founded by the late Frederick William Stevens in the year 1888. He arrived in India in the year 1867 and worked at Poona under Colonel Mellis, R.E. In January, 1868, he was transferred to Bombay where he joined General Fuller, R.E., Architect to the Government. Various promotions followed in due course. In 1876 he was appointed Examiner to the Bombay School of Art. In 1877 his services were placed at the disposal of the G. I. P. Railway Company for the purpose of designing the great terminal station at Bori Bunder, which is one of the finest examples of his creative skill. In 1878 he proceeded to Europe on

furlough for ten months. When he returned, he superintended the erection of the Railway Terminus, which is the largest building constructed in Asia in modern times. His public services were recognized at this period, and he was appointed a Fellow of the Bombay University. In 1884 Mr. Stevens was allowed to resign his services with the Government. Prior to his retirement, Government had nominated him as a member of the Municipal Corporation. In 1887 Lord Reay made him a member of the scheme for the further extension of Bombay. In 1888 the Bombay Corporation entrusted to him the designing of the Municipal Buildings. "For services rendered in connection with public buildings in Bombay," the Companionship of the Order of the Indian Empire was conferred upon him in 1889. He also designed the new Administrative Offices of the B. B. and C. I. Railway at Church Gate, Bombay, the reconstruction of the Oriental Life Assurance Offices from the premises formerly occupied by the Cathedral High School, the Alfred Sailors' Home, and the Post Office Mews on the Apollo Bunder. His last substantial work was the designing of the Chartered Bank Offices. Among buildings in other parts of India which were designed and constructed by him may be mentioned Government House, Naini Tal; the Court Houses, Mehsana, in the Baroda Territory; the Standard Offices, Calcutta; buildings in connection with the water-works at Cawnpore, Agra, and Benares, and the church at Igatpuri. He also undertook various works in connection with drainage, water-supply, sea-walls, reclamations, and roads. As Executive Engineer of the Presidenecy Division, Mr. Stevens was elected an Associate of the Institution of Civil Engineers, England, in December 1881, Fellow of the Institute of British Architects in April 1883. In 1862-63 he secured two prize medals from the Science and Art Department, England, for civil engineering and designs. In 1869 he obtained a Gold Medal and Rs. 300 from the Sassoon Mechanics, Institute for architectural and engineering design. In 1872 he received a first-class Silver Medal for the best set of architectural designs in the Bombay Exhibition, and in the Exhibition of the year 1879 he was awarded a first class Gold Medal for similar designs. Among his many other activities he found time to become the inventor of some patent fastenings for securing railway rails to chairs, and of a connection for railway rails. Mr. Stevens has contributed towards the embellishment of the city of Bombay much that is best in its architectural beauty, inspiring that insensible education of the public eye to graceful form, fine proportion, and glowing perspective, qualities that have an adorning and humanising influence. Mr. Stevens had great love for "Gothic," and it



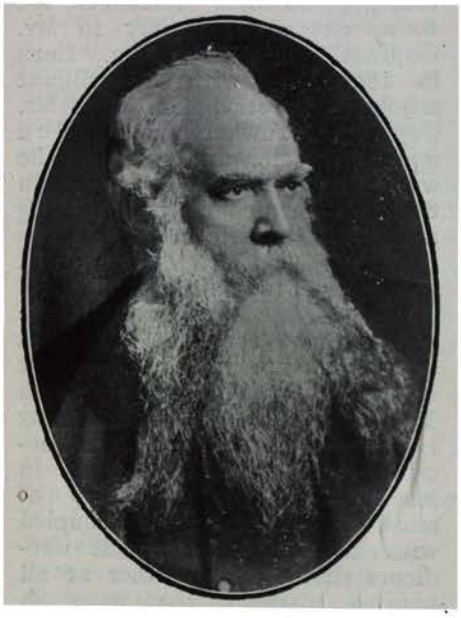
The late Mr. F. W. STEVENS.

is in "Gothic" that all his greatest work survives. Notwithstanding this preference, he could, when called upon, handle Renaissance with remarkable success. He carried out with conspicuous success the blending of Venetian Gothic with Indian Saracenic by which he created a style of architecture so excellently adapted to the climate and environment of Bombay. His success was the product of his own brain, of the deftness of his own right hand, and the doughty toughness of his resolve to turn out everything to the best of his capacity.

Mr. CHARLES FREDERICK STEVENS, M.S.A., J.P., Senior Member of Stevens & Co., Ltd., was born in Bombay in 1872 and was educated in Bath, in England, and Bristol University. He returned to India in 1892 and was articled to his father, the late Mr. F. W. Stevens, and after serving three years, he was made Chief Assistant. In 1896 he was elected a Member of the Society of Architects of London and was made a J. P. in 1895. In 1901, in open competition, he won the first prize for the best elevation of the Military Secretariat, Calcutta. He also obtained the first prize in the City of Bombay for the design of the City Improvement Trust Office, carried out under his immediate supervision. The "Edward Memorial Hall" at Indore, Central India, opened by H. R. H. the Prince of Wales in 1906, was designed and constructed by Mr. Stevens. The large residences for H. H. the Maharaja Gaekwar of Baroda, and the Technical Institute of Baroda, are also constructed by him. He is Consulting Engineer to the Baroda State. At present the works under construction are the Law Courts, and the Summer Palace for H. H. Maharaja Holkar, a Serai and other buildings for the Indore Durbar, and several other private and domestic buildings in India, Burma, and Africa. The firm carries out all building work for the National Bank in India and Africa.

Mr. JOHN DUNCAN STRACHAN, late Chief Loco. Superintendent, East Indian Railway, was born in 1829 at Aberdeen, Scotland, and educated in his native city. He served his apprenticeship to engineering at the same place, after which he joined Robert and William Hawthorn's Engineering firm at Newcastle-on-Tyne, where he remained for five years and a half. Having obtained an engagement with the East Indian Railway Company, he proceeded to India and arrived in Calcutta in January 1857, and was sent up-country to Allahabad, in the Locomotive Department of the Company. His service with the East Indian Railway extended over a period of 34 years, and at the time of his retirement from the Company's service he was Chief Loco. Superintendent of the Locomotive Department at Jamalpur.

Mr. Strachan has been connected with the Allahabad Bank, Limited,



Mr. JOHN DUNCAN STRACHAN.

for over 35 years, and for over a quarter of a century has been a Director of the Bank.

HEGERLE, SULZER & Co., Merchants, 20, Hummum Street, Bombay. The Bombay house, which was established in the year 1896, is an agency of the head firm, whose offices are at Zurich in Switzerland, and which was established in 1867. The principal business of the firm is in English and Continental woollen and cotton piece-goods and silken fabrics. They have branches of their own at Delhi, Cawnpore and Amritsar. The partners are William Hegerle and Albert Sulzer. The Manager of the Bombay Branch is Mr. O. Bruderer, and of the Delhi Branch, Mr. Jac. Rank.

The SWADESHI MILLS Company, Bombay. Messrs. Tata & Sons are the Agents for this Concern, the promoter of which was that distinguished Indian, the late Mr. J. N. Tata, whose original intention was to erect a Mill for the production of fine goods only. Taking advantage, however, of the opportunity, Mr. Tata purchased, on favourable terms, one of the largest Mills in India, the Dharamsey Mills (founded in 1860), and with this acquisition altered his first intentions, launching in 1887 a new venture under the name of the Swadeshi Mills Company. Prior to the Agency being taken over by Messrs. Tata & Sons, the Mill went into liquidation four times between 1860 and 1887, a contingency which has twice been obviated under new management. As a first important step in the right direction, the old machinery was immediately renovated, and at the present date the Mill is practically complete with 50,000 spindles and 1,150 looms. To-day the Mill spins count as fine as 120's out of Egyptian cotton, and weaves jaconets and fine dhoties out of 60's warp and 80's weft yarns produced at the Mill. In India, China and the Levant the Company's yarns enjoy a very high reputation, its cloth being chiefly consumed in India and in very great demand. The paid-up capital of the Company, which, it should be added, was awarded gold and silver medals at the Exhibitions of India, Athens, and Hanoi, is Rs. 20,00,000 with a reserve of Rs. 10,00,000. The last ad-interim dividend paid was at the rate of 18 per cent. on the paid-up capital.

The Hon. Sir VITHALDAS DAMODHER THACKERSEY, J.P., belongs to the Bhattia community, a wealthy and enterprising class which controls a very large proportion of the trade of Bombay, and has done much to make Bombay prosperous and progressive. His firm controls five of the largest cotton spinning and weaving mills in Bombay, namely, the Hindoostan Spinning and Weaving Mills Co., Ld.; the Western India Spinning and Manufacturing Co., Ld.; the Indian Manufacturing Co., Ld.; the Hongkong Spinning and Manufacturing Co., Ld.; and the Crown Spinning and Manufacturing Co., Ld., which have in all 132,604 spindles and 2,686 looms, and employ 5,553 hands. Sir Vithaldas has, for the past ten years, taken an important part in the public life of Bombay. He has been a member of the Corporation since 1898, has served as Chairman of the Standing Committee, and was elected in 1907 to the Presidentship of the Corporation. He is also Chairman of the Bombay Mill-owners' Association. The Government of Bombay nominated him as a non-official member of the Provincial Legislative Council in 1903 and again in 1905. When the Congress was held in Bombay in 1904, it was resolved to hold an Industrial Exhibition in connection therewith, and Sir Vithaldas was elected Chairman of the Exhibition Committee. The Bombay Industrial Exhibition of 1904 was the largest and most successful of the Exhibitions held in connection with the Congress. Sir Vithaldas was chosen President of the second Industrial Conference held at Calcutta in 1906, which was attended by representatives from all parts of the country, and in which prominent Indians and Anglo-Indians interested in India's

Hon. Sir V. D. THACKERSEY.

industrial condition took part. Sir Vithaldas takes a deep interest in the progress of mining in India. He is also the Chairman of a large Indian Bank, named The Indian Specie Bank, with a capital of two crores of rupees, and branches in many towns. He is also associated with many Joint Stock Companies as a Director. Bombay has good reason to be proud of a citizen of such solid worth.

At the request of the Government of India, Sir Vithaldas was nominated jointly by the Bombay Chamber of Commerce and the Bombay Mill-owners' Association as their representative on the Indian Factory

Commission appointed to investigate the conditions of factory labour in India and to make suggestions for their improvement. As a Member of the Commission he visited all the principal industrial towns in India and Burma and subsequently took an active part in drafting the report at Simla. On the King's Birthday in June 1908, the honour of Knighthood was conferred on him by His Majesty in recognition of his many services to the public. Sir Vithaldas is one of the youngest Indians to get the coveted honour, being only thirty-six years of age. The news of his knighthood was received with satisfaction all over the country, by Europeans and Indians alike, and consequently messages were sent to him by many of the highest officials in the country as well as by distinguished non-officials. The following sentences taken from a leading article in the *Times of India* well express the general opinion:—

"Sir Vithaldas Thackersey must be our youngest Knight outside the ruling families, but none is more worthy of the honour. He is only thirty-six years of age, but he has crowded into those years any amount of public work which many older men must envy. The head of a great and flourishing industrial house, Sir Vithaldas has yet made the time to act twice as Chairman of the Mill-owners' Association, to pass the President's chair of the Bombay Corporation, and to take an active interest in many other beneficial public works. To mention only two, in the housing of the poor and the formation of a land bank to operate in the irrigated tracts, Sir Vithaldas has evolved practicable schemes which must ultimately bear fruit. Even if Sir Vithaldas has done nothing more than accept a seat on the Factory Commission, we should say that he is one of those whom Government should delight to honour, for it involved a great sacrifice of his business interests, whilst at the same time enabling the textile industry to be most authoritatively represented. One thing more needs to be said: Sir Vithaldas does not advertise, and in the new Knight, Bombay City in general, and the Bhattia Community in particular, have a citizen whom all classes honour."

Mr. T. GOPINATHA TAWKER is the chief partner in the Firm of Tawker & Sons, Jewellers and Merchants in precious stones, of Indian and continental fame.

The Tawkers of Madras, who are the descendants of the State jewellers to the famous Mahratta Ruler, Sivaji, and his successors, came to Southern India at their royal patron's command, and settled at Tanjore when Sivaji's supremacy was established over that kingdom in the 17th century. Of a noble family, the Tawkers would appear to have been originally jewellers to the Royal house alone, in the spirit of exclusion which usually characterised families

Mr. T. G. TAWKER.

of distinction. Just before and after the decline and fall of the royal family of Tanjore, the Tawkers extended the scope of their transactions to others less highly placed in the social scale, and their business expanded so rapidly that the royal jewellers established their reputation as merchants in precious stones in Madras (whither they had turned their attention), even as far back as fifty years ago.

The family business was being carried on in an unostentatious manner by Mr. Ranganatha Tawker, Mr. Gopinatha Tawker's father, at his residence in Sowcarpet. The demand for increased efficiency to cope with the increasing business relations led to a change of career in Mr. Gopinatha Tawker's life. Born in 1862, and with a brilliant scholastic career before him, Mr. Gopinatha Tawker was called upon to determine, whether he would prosecute his studies in the College department, having brilliantly matriculated at an early age, or join his ancestral profession of jewellers and diamond merchants. It was then that the prejudices of the time that held that trade in any form could not command respect, battled within Mr. Gopinatha Tawker's young mind for mastery over the accumulated experiences of ages in his family. The pliability of mind at that early age, coupled with the habit of implicit obedience shown to his father at all times, decided the issue in favour of his father's calling. Early in his career as a jeweller he came under the influence of H. H. the late Maharajah of Vizianagram, popularly known as "the charming Prince of India." The Maharajah's patronage gave an impetus to Mr. Gopinatha Tawker's business talents, and at the Maharajah's suggestion he undertook the arduous task of touring through India in search of precious stones of historical antiquity. So successful was he, that a collection of these which for rarity, antiquarian worth, and historical associations, is really unique, now adorns the showroom at his palatial business premises at Mount Road, Madras; a collection that attracts universal attention and draws unstinted praise from Continental princes and nobility. Mr. Gopinatha Tawker gave special impetus to the Art Department, and developed and improved upon the old methods and models to suit modern taste to such an extent, that when his collection was exhibited at the Delhi Durbar, Sir George Watt described the exhibits as a "superb display." When, at His Majesty's Coronation, his artistic wares and priceless stones of unusual size and brilliance were on view, the Royal Family and the nobility gave unsolicited testimonials in glowing terms.

A special feature of Mr. Gopinatha Tawker's method of business is bold speculation, tempered by prudence and based on a calculation of chances. Lakhs of rupees worth of jewellery have been sent at considerable risk to Cabul, the seat of H. M. the Amir, with highly gratifying results. Continental merchants import his wares and precious stones in large quantities; an unfailing sign of their intrinsic worth and of the appreciation that they command.

Mr. Gopinatha Tawker encourages his brother traders with substantial help, and sometimes with valuable advice. Among his patrons are:—His Majesty the Amir of Afghanistan, H. H. the Shah of Persia, H. H. the Nizam of Hyderabad Their Highnesses the Maharajahs of Mysore, Baroda, Travancore, Patiala, Jodhpur, Jaipur, Dholpur, Benares, and Vizianagram. In Architecture, of which he has made a special study, Mr. Tawker has given ample proof of his ability in design and scientific execution, in his three palatial buildings, two on the Mount Road, occupied by his firm, and that of Messrs. Whiteaway, Laidlaw & Co., respectively, and one at Royapettah, all of which have considerably added to the beauty of the city.

Another subject to which Mr. Gopinatha Tawker has now successfully turned his attention is agriculture. He has been, at considerable cost, experimenting on his valuable properties with a view to discover the advantages of the employment of modern implements of agriculture, and to give his experience to the cultivating classes. His scientifically cultivated farm near Red Hills, which was visited by H. E. the Governor and other important Government officials, bears ample evidence of the labour and thought bestowed on all concerns undertaken by him Mr. Gopinatha Tawker is able to devote some of his time to industries other than the jeweller's business, as he is assisted by his two brothers, the second of whom is well known in Southern India as an expert connoisseur of gems. Mr. Gopinatha Tawker has become rich by his untiring industry, patient application, and careful system, and has advanced the indigenous jewellery trade in its artistic branch to a very great extent.

Messrs. T. E. THOMSON & Co., Ld., 9, Esplanade, East, Mechanical and Electrical Engineers, Ironmongers, Silversmiths, Metal Merchants and Contractors, without doubt the largest and best known European Hardware firm throughout India and Burma.

The firm, whose parent House is Messrs. John Shaw & Sons (Wolverhampton), Ld., Wolverhampton, was originally established by a Mr. T. E. Thomson in 1820, on a site now occupied by a portion of the Great Eastern Hotel, and while the Earl of Moira, P.C., was Governor-General of Fort William.

Dating from the inception of the firm as the "Original Hardware Establishment" in India and continuing to be known familiarly as T. E. Thomson & Co., it has developed from a small beginning to its present magnitude.

The premises No. 9, Esplanade, East, illustrated below, have been in occupation by the firm since the year 1853. They are situated in the pleasantest portion of Calcutta, immediately facing the maidan, and are in the main of considerable historical interest.

The higher portion of the old building is the original, though slightly

Messrs. T. E. THOMSON & Co.'s PREMISES.

altered edifice where, according to tradition, Warren Hastings lived in 1774 when Governor-General under the East India Company.

Of recent years trade has developed in a most marvellous manner, and in order to meet the demand for increased accommodation and to facilitate the handling of an ever-increasing business, it was found needful some five years ago to acquire extensive property and largely increased godown accommodation in Bentinck Lane and Dhurrumtollah Street.

No longer than two years ago it was decided to carry out extensive structural alterations at the No. 9, Esplanade premises; this was accordingly done with very satisfactory and pleasing results.

The new façade in white sand stone, the conception of which was carried out by Messrs. Mackintosh, Burn & Co., is one of the most imposing and graceful frontages to be found in Calcutta. The valuable increase in show room space and storage accommodation generally has proved a great boon, and with the establishment lighted throughout with electricity and containing a stock replete with almost every conceivable article in demand, there is, perhaps, no finer emporium to be found in the city.

The Firm's Workshops, embracing the Engineering, Electrical and Cycle branches of the business occupy commodious premises, situated at the rear of the main building, and there controlled by expert European engineers. Employment is found for a very large staff of trained mechanics.

Messrs. T. E. Thomson & Co.'s Show Rooms.

The immense stock, comprising English and American hardware, carried by the firm, is a matter of surprise to most people visiting the establishment, while another object of exceptional interest is the handsome catalogue issued yearly by the firm. It contains upwards of 800 profusely illustrated pages, setting forth everything that is latest and best in hardware.

The control of the business is vested in the Manager, Mr. J. S. Harris, assisted by Mr. J. Bazeley and Mr. J. H. Wiggett, Assistant Managers.

The head-quarters of the firm as before indicated are —

Messrs. John Shaw & Sons (Wolverhampton), Ld., Wolverhampton, Staffordshire, England, with offices at 11, Charter House Street, Holborn; 82, François Xavier Street, Montreal; Long Market Street, Cape Town, and 10

Messrs. T. E. Thomson & Co.'s Show Rooms.

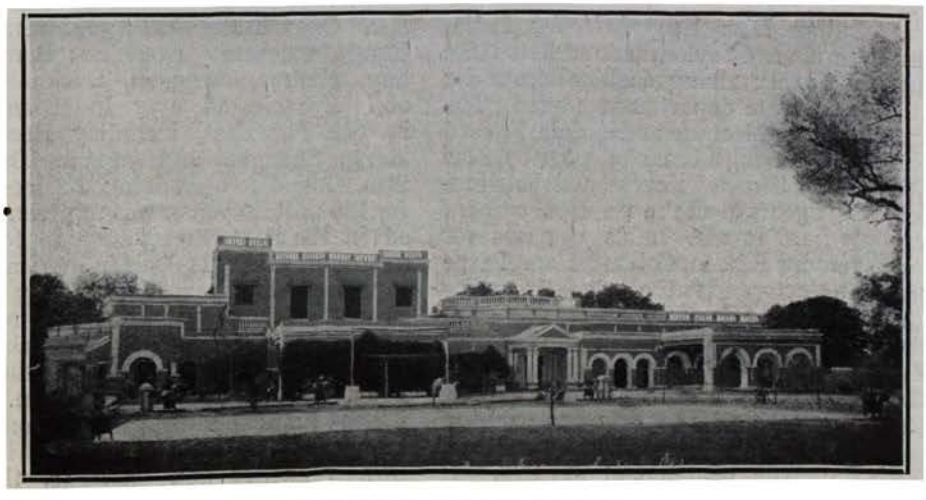
Sir Lowry Road, Cape Town, and Agents in New York, Valparaiso, Havana, Transvaal Colony, etc.

Among leading firms of English manufacturers represented by Messrs. T. E. Thomson & Co., Ld., are —

Messrs. Clayton & Shuttleworth, Messrs. The Chadborn Coldwell Manfctg. Co., Messrs. The American Encaustic Tiling Co., Messrs. The Standard Sanitary Manfctg. Co., Messrs. Willcox & Gibbs, Messrs. Sanderson Brothers & Mewbold, Messrs. Jas. Hinks & Sons, Messrs. Nettlefold, Ld.; Messrs. Jas. Cartland & Sons; Messrs. W. Hunt & Sons; Messrs. Whitfield, Ld.; Messrs. Hoskin & Sewell: Messrs. J. Dixon & Sons; Messrs. Flint Eddy & Co.; Messrs. The Simmons Hardware Co.; Messrs. Humber, Ld.; Messrs. The Rover Cycle Co.; Messrs. The Star Cycle Co.; Messrs. Chubb & Sons, Messrs. Jos. Evans & Sons; Messrs. A. G. Wells, and Messrs. The Blickensderfer Typewriter Co.

The BANK OF UPPER INDIA, Limited. This well-known institution was founded at Meerut in the year 1862, a few years after the suppression of the Indian Mutiny; in the very place indeed where the great rebellion originated. The first trustees of the Bank were Major E. Tyrwhitt and Messrs. W. A. Forbes, I.C.S., Magistrate and Collector; and G. G. Billings, U.C.S. Mr. McLeavy, a resident of Meerut, was appointed Manager. About four years after its establishment the Bank had to face a great crisis during the panic which followed the disastrous failure of Overend, Gurney & Co., and the consequent downfall of the Agra and Masterman's Bank. Public confidence was destroyed, and business paralysed for the time being. The last mentioned concern was the London Agent for the Bank of Upper India, and its suspension caused the greatest inconvenience to the latter, though the Bank ultimately extricated itself without ultimate loss. The present Manager of the Bank of Upper India, Mr. E. Weston, was in London at the time of the failures, and with his elder brother presented a large draft from the Bank of Upper India on the Agra and Masterman's Bank, received two days previously, when he was informed that the Bank had suspended payment that morning. About three years subsequent to the failures, Mr. E. Weston joined the Bank of Upper India as an assistant. The business of the Bank of Upper India has very much increased and widened since those early days. A branch was opened at Agra on the failure of the Agra and Masterman's Bank. Further branches were soon afterwards opened at Cawnpore and Fyzabad, which, however, were subsequently closed, and others were opened at Lucknow, Allahabad, Bareilly, and Naini Tal. In the year 1885 a branch was opened at Simla with Mr. E. R. Douglas, C.I.E., as Agent. Six months later Mr. E. Weston relieved Mr. Douglas and continued in charge as Agent at Simla for nearly eleven years. The Simla branch occupies one of the best business sites in the station. Further branches have been opened at Delhi and Mussoorie during the past few years.

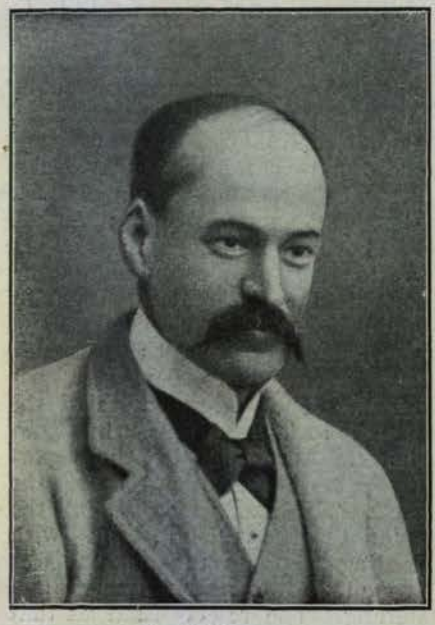
Among the Directors of the Bank of Upper India have been such well-known men as General J. C. C. Gray, General J. Nash, C.B.; Messrs. J. H. De Salis, E. Warner, Bar.-at-Law, Government Advocate, N.-W. P.; Joseph Stone, of the Sind, Punjab and Delhi Railways, now the North-Western Railway. The present Directors are Colonel S. J. Rennie, R.A.M.C. (retired); Mr. T. T. Forbes, Bar.-at-Law; Mr. E. Weston and Mr. Shaik Wahiduddin, son of the late Khan Bahadur Abdul Karim, C.I.E. Since the Bank was founded in 1862 the dividends have averaged 10 per cent. per annum. The paid-up capital of the Bank is 10 lakhs of rupees in 10,000 shares. According to the report to end of December 1906, the Bank held fixed deposits, to the amount of 133 lakhs, and with floating deposits the amount was brought up to nearly one million sterling. The reserve fund at that period stood at Rs. 7,40,000. During the incumbency of the previous Manager the paramount importance of building up this fund did not seem to have been recognized, and when Mr. Weston took charge, the reserve fund stood at only 3½ lakhs; the result of 34 years' working. Mr. Weston, however, at once took the matter in hand, and in the past ten years has more than doubled the fund, which now stands as above stated. The business of the Bank is in a most prosperous condition, and it is one of the most stable of Indian concerns.



BANK OF UPPER INDIA, MEERUT.

Mr. EDWIN WESTON, V.D., Manager and Director, Bank of Upper India, Limited, Meerut, was born at Birmingham, and educated at Borough School, Kirkcaldy, Fifeshire, and at Queen's College, Taunton, Somersetshire. He obtained his first experience of banking in Selkirk, Scotland. In the year 1868 he came out to India and joined the Bank of Upper India in 1869, at the Head Office of the Company, Meerut, as an assistant. He has passed

through the different grades in the Bank's service as Assistant, Accountant and Agent. He was appointed General Manager in 1897 and subsequently made Director. Mr. Weston is also a Director of



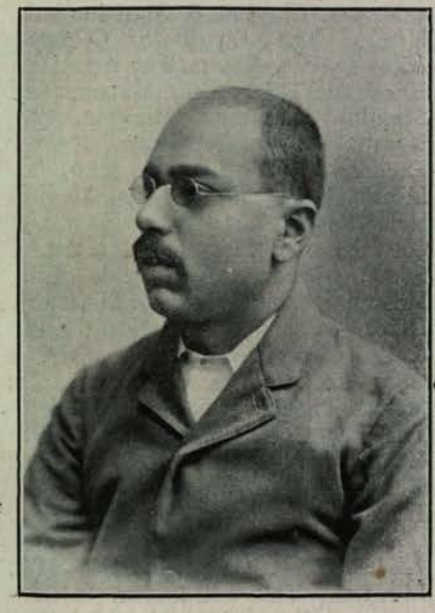
Mr. E. WESTON.

the Standard Life Assurance Company and committee-man of the Wheeler Club, Limited, Meerut. He is one of the working committee of the Bengal Punjab Rifle Association. He is a well-known rifle shot and is one of the few who have won the Viceroy's Gold Medal at the B. P. R. A. Meeting. The *Pioneer* newspaper, a few years ago, mentioned him as among the first five famous marksmen of India. A good cricketer and footballer, he was Honorary Secretary of the Simla Cricket Club and of the Durand Football Tournament until he left Simla to take up the management of the Bank. He is married to the daughter of the late Mr. W. Wilson, of Meerut, and has three sons and two daughters. His eldest son, Mr. B. A. Weston, is Agent of the Bank of Upper India at Simla, and his second son, Mr. G. A. Weston, is Superintendent in the Punjab Police. The third son, Mr. R. D. Weston, is an officer in the Militia Battalion of the Middlesex Regiment at Hounslow.

Messrs. VALABHDAS, LAKHMIDAS & Co., 36, Churchgate St., Fort, Bombay, was established in December 1902 under the title of Messrs. Valabhdas Runchordas & Co., the partners then as now being Mr. Valabhdas Runchordas and Mr. Lakhmidas Rowji Tairsee. The firm is chiefly interested in imports, though it carries on a small export trade with England, America and Germany. The lines worked by the firm are various, including hardware, cycles, medicine, soaps, etc., but they are principally interested in talking machines, the business in which has been developed to such an extent that it has been rightly called "one of the largest talking machine concerns in the Far East." The firm are the sole Agents for the "Beka

Mr. VALABHDAS RUNCHORDAS.

Indian Disc Records" for India, Burma and Ceylon, and markets these and other talking machine lines under a separate department styled "The Talking Machine and Indian Record Co.," having a branch depôt at 7, Bow Bazar Street, Calcutta, and distributing agents in all the principal cities of India. It also holds agencies for genuine Edison, Columbia and Pathé products, and is the sole distributing agency for the Bombay Presidency of The Gramophone and Typewriter Co., Ld., and also sole agents for Brooke Bond's teas for the Bombay Presidency. The firm has connections in all principal European and American commercial centres. It also carries on a banking and finance business on a small scale. Mr. Valabhdas was a partner in Messrs. Churchill and Hoosein of London, Manchester and Bombay, before he joined his present firm. Mr. Lakhmidas is a graduate of the Bombay University in Arts and is also a



Mr. L. R. TAIRSEE.

large landed proprietor. Both the partners belong to the Bhattia community, which is highly reputed in the Bombay Presidency for its commercial instincts.

The VALVOLINE OIL Company, 30, Strand Road, Calcutta. Head Offices: Liverpool and New York. Established in Bombay in the year 1897. Members of the firm: Messrs. C. R. Boult and D. Ellis. Head Office in the East: 30, Strand Road, Calcutta. Branches: Bombay, Madras, Rangoon, Lucknow, etc. Agencies all over India and in the Far East, including Hong Kong, Shanghai and Japan. The firm which has been doing business for the past 40 years, was represented in the East through agents for nearly 20 years. It deals in lubricating oil specially manufactured by a process of superheated steam, protected under a patent. It also manufactures a special "Boiler Fluid" called "Ucalypsum." These lubricants and boiler compositions are manufactured in its own refineries and factories, the former in New Jersey and Pennsylvania, and the latter in Tasmania.

Besides the Government, many important cotton and other mills and factories throughout India value these articles, and use them in large quantities owing to their unsurpassable quality. The firm supplied H. M. S. *Dreadnought* with all lubricating oils required, and the trial proved a great success. Mr. Howard Charles Linney Barber, General Manager in the East for the firm, was born at Birmingham in the year 1877 and educated at King Edward's High School of that city. After finishing his education he served his time at Fredrick Jeavons & Co., Foreign Merchants, in Birmingham, thus gaining his commercial training and experience in engineering

Mr. H. C. Linney Barber.

in his father's firm. In the year 1898 he joined the Valvoline Oil Company at Birmingham as an Assistant Agent for the Midlands. In the year 1900 he was transferred to Calcutta, as Manager, to open an office. Since his arrival in India he has opened several offices in this country and arranged many agencies. In the year 1906, he was appointed General Manager in the East for the Company, which position he still successfully holds to the satisfaction of his firm.

It may be mentioned that this Company is very jealous of the excellent reputation of its oils, and to guard against admixture in any way, the oils are sold only direct to the actual users, thus passing straight from the refineries to the consumer in every case.

Messrs. B. VASSEL & Co., Ld., 3, Hastings Road, Allahabad, Architects and Contractors. This Company was formed in the year 1906 by the present Managing Director, Mr. Bruno Vassel, with a registered capital of Rs. 50,000. The Directors of the Company are Mr. S. T. Hamilton, Agent, Bank of Upper India, Allahabad; Manni Lal Sahib and Mr. B. Vassel. The Company combines the business of Government Contractors with that of Architects and Engineers. The Leper Asylum, Naini Station, was erected by them, also the Oxford and Cambridge Hostel, Allahabad. Their work also includes large dwelling-houses for the Maharani of Pertabgarh, and ball room and theatre for the Allahabad Club. Mr. Bruno Vassel is a native of Germany and was born at Berlin. He studied architecture at the Polytechnique in his native city, and commenced to practise his profession in the year 1900, with Messrs. Frizzoni of Cawnpore. He remained with this firm till the year 1905, returning to Europe in that year. On his return to India he established the present business. The Company employs some two to three hundred skilled workmen and labourers, under the supervision of European assistants.

The VICTORIA MILLS, Limited, Gwaltoli, Cawnpore, established in the year 1886. Capital Rs. 18,00,000 fully paid up in 12,000 Ordinary Shares of Rs. 100 each and 6,000 6% Preference Shares of Rs. 100 each. The Mill has 96,000 spindles and 900 looms. The manufactures comprise yarn and cloth of every description, the speciality being tent cloth. The Company also manufacture tents, camp furniture, durries, ropes, newar, floor cloths, towels, napkins and cotton goods of every description. The Mill is equipped with up-to-date first class machinery and is conducted under expert European supervision. The premises occupy altogether nearly 49 acres of land. The firm also supply tents to Government, Native States, and the general public. They furnished tents and durries, under Government contract, for the camp at Cawnpore during the visit of the Amir of Kabul to India. Mr. Atherton West, Manager and Secretary to the Company, came to India in the year 1882 from Lancashire, and under his able and expert advice and supervision the Company is thriving remarkably well.

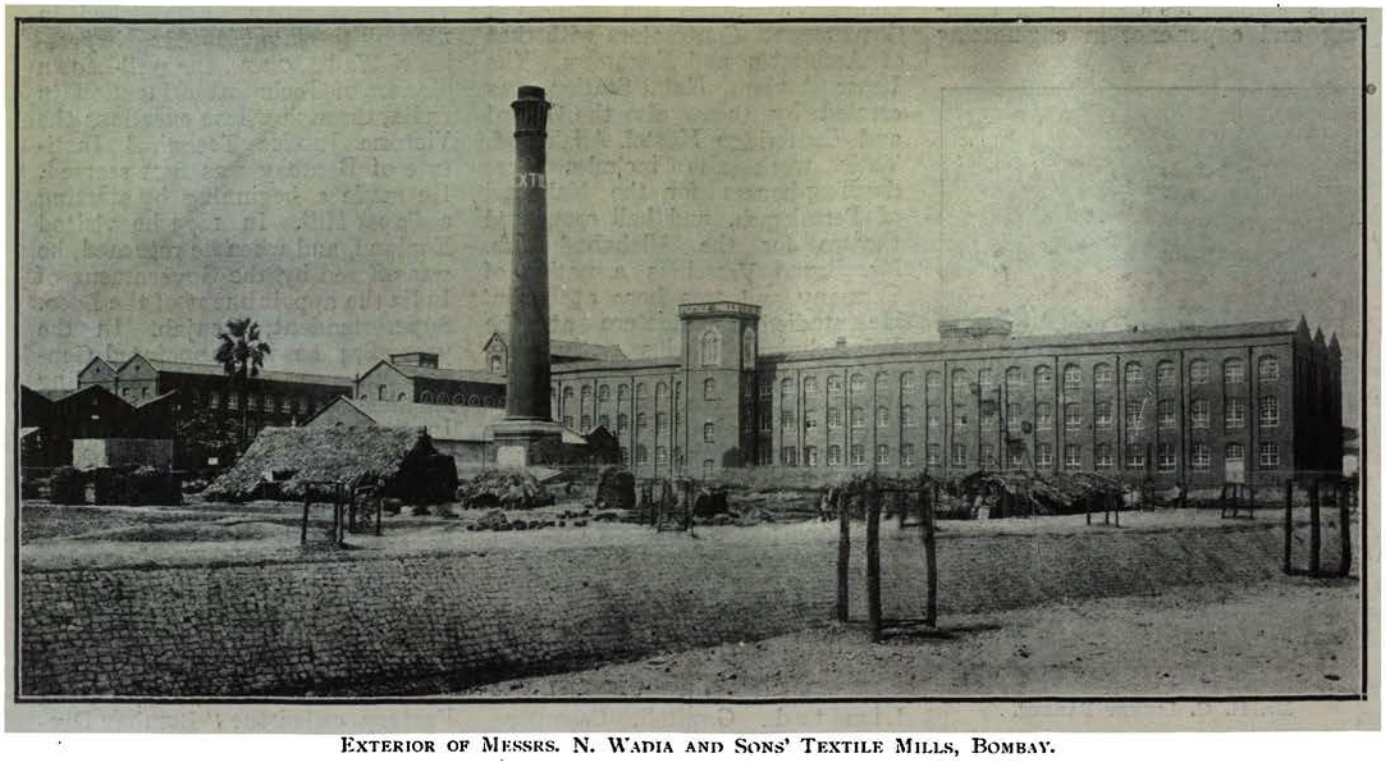
Messrs. NOWROSJEE WADIA & SONS, Engineers and Merchants. Offices, Cumballa Hill (Bella Vista), Bombay. Established in 1879 by the late Hon. Mr. Nowrosjee N. Wadia, C.I.E., the well-known pioneer of Technical Education in India, through whose exertions the Victoria Jubilee Technical Institute of Bombay was first started. He made a beginning by starting a Paper Mill. In 1873 he visited England, and when he returned, he was offered by the Government of India the appointment of the Loco. Superintendent, Punjab. In the year 1874 he was appointed General Manager and Superintending Engineer of all the Petit Mills. In the meanwhile he took up the valuable agencies of Messrs. Platt Brothers, the largest Spinning and Weaving Machinery makers in the world, and Messrs. Hick, Hargreaves of Bolton, the well-known Engine Builders. The firm imported cotton machinery, engines and boilers, and supplied the same to different mills in Bombay and in the District. In 1879 a Dyeing Factory, called the "Bombay Dyeing and Manufacturing Co., Ld.," was started, in partnership with the late Sir Dinshaw Maneckjee Petit, Mr. John S. Alston and Mr. Reid. In 1891 Mr. N. N. Wadia's sons, Messrs. C N. Wadia, N. N. Wadia, and P. N. Wadia, were admitted as partners to the firm. In 1895 they built the "Textile Mills," at present having 53,000 spindles and 1,700 looms. In 1898 "The Century Mills" were started, at present having 55,000 spindles, and 2,015 looms. The firm is now building a new Cotton Mill called the "Spring Mills," to hold at the start 32,000 spindles and 900 looms, in connection with the

Bombay Dyeing Company. The firm represents, as Sole Agents:—

Messrs. Platt Bros. & Co., Ld., Oldham, in Cotton Machinery.
" Hick, Hargreaves & Co., Ld., Bolton, in Engines and Boilers.
" J. P. Hall & Co., Oldham, in Electrical Appliances.
" John Whiteley & Sons, Halifax, in Card Fillets.
" Wilson Bros. & Co., Ld., Garston, Liverpool, in Bobbins.
" Eadie Bros. & Co., Paisley.

The firm has agencies all over India and corresponding agents in various parts of Europe. The present partners in the firm are Messrs. Nasserwanjee Nowrosjee Wadia, J.P., M.I.M.E.; Rustumjee Nowrosjee Wadia, and George Ashby. Mr. N. N. Wadia, senior partner to the firm, was born in Bombay in 1873, and was educated at St. Xavier's College, Bombay. On leaving his school at the age of 15 years he was apprenticed to his father, the Hon. Mr. Wadia, under whom he received a thorough education in Engineering, Cotton Spinning, Weaving and Dyeing, and the conduct of a Cotton Mill. In 1891 he was admitted a partner in his father's business, and in 1901 he was admitted a member of the Institute of Mechanical Engineers, London. He was appointed a Justice of the Peace for the Island of Bombay in the year 1906. He is Chairman of the Bombay Dyeing Company and a Director of the Textile Manufacturing Company.

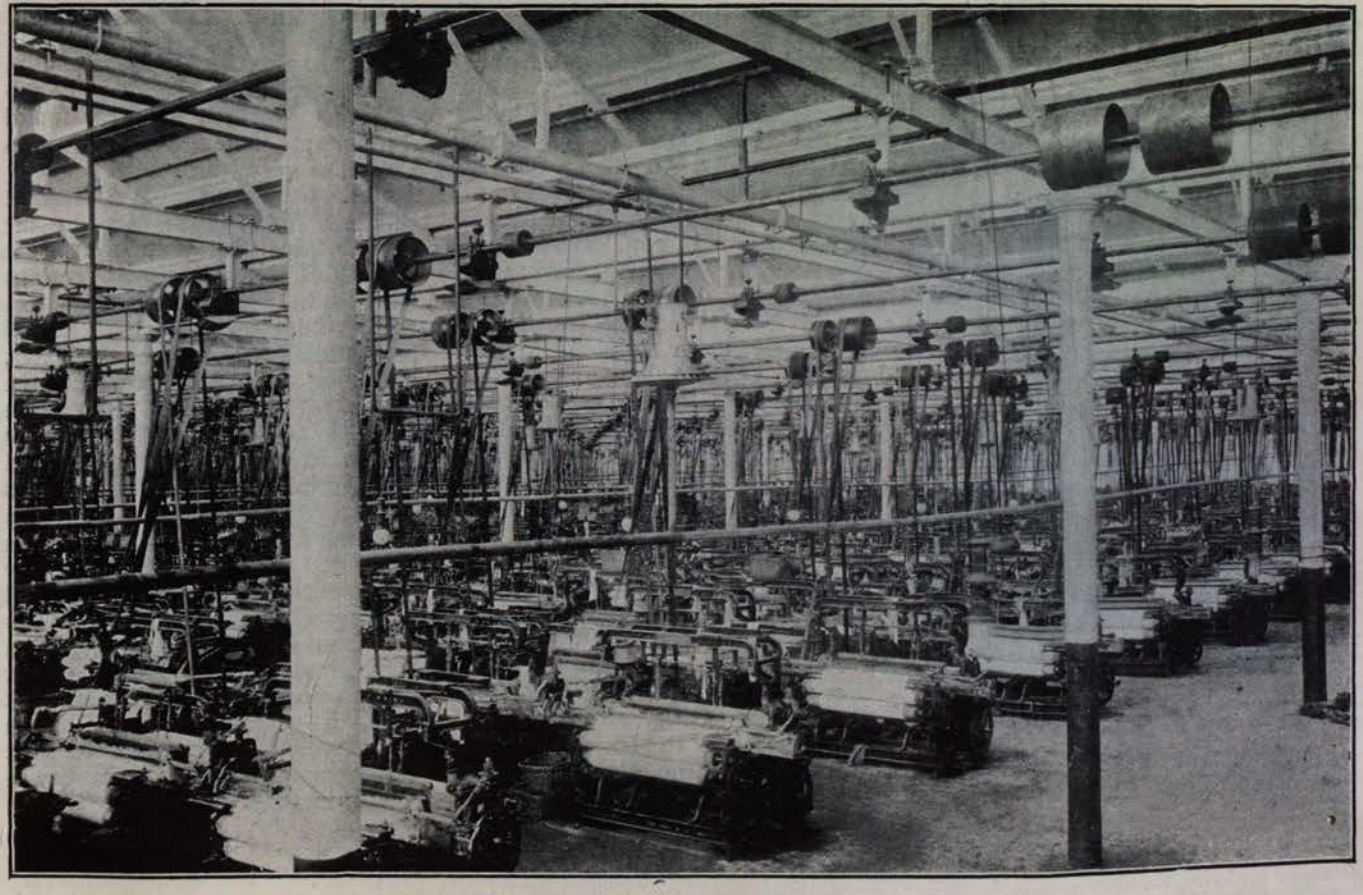
Mr. NOWROJEE MANECKJEE WADIA, C.I.E.—This gentleman comes from the well-known Parsee family of that name. The Wadias during the eighteenth and the early half of the nineteenth century were settled at Bombay as ship-builders on no mean scale, at a time when the countries East of Suez were undistinguished by any skill in the art. The founder of the family and great grandfather of the subject of this sketch, Seth Lowjee Nusserwanjee Wadia, who was born at Surat in the year 1710, had a peculiar bent towards the shipwright's craft, and acquired such knowledge and skill in the same that his work came to be held in equal esteem with the best examples turned out in Europe. The Parsee-built ships of Bombay acquired a great reputation even with the maritime English nation. During the century and more that Seth Lowjee Nusserwanjee Wadia and his descendants carried on the building of ships at Bombay, the business of designing and constructing the vessels built remained entirely in native hands. The original Wadia was thus the first to demonstrate that work on European lines could be efficiently carried out by Asiatics without any assistance except from their own brains and hands. During the years they practised the shipwright art, the Wadias produced some 350 men-of-war and other vessels. The men-of-war were constructed to the orders of the Government of India and gave complete satisfaction for their stout and sea-worthy qualities, and the firm were awarded not only a gold medal, but an extensive estate at Salsette near Bombay, which remains in the family to this day. Seth Nusserwanjee Wadia in return for services rendered by him to the French Government was decorated with the Legion of Honour by Napoleon Bonaparte. The grandfather of Mr. Nowrojee N. Wadia inherited



EXTERIOR OF MESSRS. N. WADIA AND SONS' TEXTILE MILLS, BOMBAY.

his father's skill and was a prominent man of his time. But at this period the family had ceased to devote their attention entirely to shipbuilding. They had entered commercial life and took up business as brokers, and in negotiating loans for native princes and others. For his valuable service as the agent of the French Government in India Mr. Jehangeer Wadia was presented with a gold medal by Louis Phillippe. On his death without male issue, the shipbuilding craft seems to have been abandoned by the family for want of a son inheriting the genius of the first Wadia and his son. The splendid fortune left by Mr. Jehangeer Wadia passed to his daughter, Bai Mollibai Wadia, a very famous lady of her time. She continued the commercial side of the family's business and added considerably to the original wealth transmitted to her, owing to her great business capacity. She unfortunately lost her husband at the age of 26 and for the next 60 years devoted herself to a life of widowhood and good works. Bai Mollibai was the mother of the present representative of the family, Mr. Nowrojee M. Wadia. The habit of charity which she practised during her long life has descended to her son. During her lifetime Bai Mollibai gave away to deserving works no less a sum than twenty-six lakhs of rupees. Her public charities included Rs. 4,00,000 for the hospital at Bombay which bears her name: Rs. 1,25,000 for the fire temple at Udwada: and Rs. 1,33,000 to the Petit Orphanage. Despite these beneficences owing to his mother's great business qualities, Mr. Nowrojee M. Wadia inherited at her death, which took place in 1897, one of the greatest fortunes in India. He received a sound training in vernacular and English, and established with his brother Jehangir N. Wadia (since deceased) a firm under that name which entered into extensive commercial dealings with Europe. In 1863 Mr. Nowrojee Wadia travelled in Europe, and was personally received by the Emperor

Mr. N. M. Wadia.



Interior of Messrs. N. Wadia and Sons' Textile Mills, Bombay.

Napoleon III. The "Share mania" of 1864 hit the firm of J. Nowrojee & Co. hardly. In 1867 Mr. Nowrojee Wadia closed the business and devoted himself to other pursuits, including public business. He was appointed a Justice of the Peace in 1873, and the Government recognized his lifetime of good works with the honour of a Companionship of the Indian Empire. Mr. Nowrojee Wadia was present with Sir Jamsetjee Jeejeebhoy at the Imperial Assemblage at Delhi on the assumption of the title of Empress by Queen Victoria. In munificence Mr. Nowrojee Wadia, since his accession to the headship of the family, has been noted for his benefactions, which in two and a half years after his mother's death announced to over forty-two thousand rupees. Mr. Wadia is known for his charities, but time alone can show how many have cause to be grateful to this Parsee philanthropist and descendant of the famous shipwright.

WEST'S PATENT PRESS Company, Limited, Cotton Pressers

Mr. G. E. GRABHAM.

and one of the pioneers of the Cotton Press Industry in India. Established in India in the year 1881. The original Company was first started in London in 1872, and its Indian Branch was first opened at Aligarh in 1881, for the purpose of ginning and pressing cotton. The Company has ginning and pressing houses at various stations in India, and it has given a great impetus to the growth of the cotton industry in general by the introduction of hydraulic presses, of which the Company is one of the pioneers. Since the establishment of this Company, the cotton industry in India has extended enormously all throughout the land, and the Company deserves creditable mention in the annals of the Cotton Industry in India, for the introduction of hydraulic cotton presses, and the facilitation of the carriage of cotton from one place to another. Mr. George Edward Grabham, who joined the Company in London in 1887, is the local Agent for its Aligarh Division.

Messrs. WINN & CO., Sculptors and Contractors, Allahabad. Proprietor, Mr. H. W. Winn. The late James Winn, formerly Captain in the Indian Sub-Medical Service, established this business at Chunar in the year 1882. It was carried on personally by him till his death in the year 1888, when it was continued by the present proprietor, his son, Mr. H. W. Winn. The business having attained large dimensions, Mr. Winn found it advisable to transfer his head-quarters to Allahabad, keeping on Chunar, where the stone quarries are situated, as a branch. The Chunar stone is utilized for both building and monumental purposes, the firm also importing marble from Italy, Sicily and Belgium. The business is the foremost in this line in Northern India, giving employment to about thirty skilled workmen, most of whom have been in the service for periods of from 15 to 25 years. Messrs. Winn & Co. are noted for fine workmanship. Specimens of their work are to be seen in the pedestals of the Queen Victoria Memorials at Budaon, Gorakhpur, and Fatehgarh, and also in the Famine Relief Memorials at Jubbulpore and Nagpur which were erected by the Central Provinces Government. Some of the marble fittings at the Viceregal Lodge,

Mr. H. W. WINN.

Simla, are also the work of the firm. Their architectural and monumental sculpture is to be found throughout India, the business having a very wide scope.

The proprietor, Mr. Herbert William Winn, was born in the Punjab in the year 1865. He received his education at various schools in the United Provinces and at Calcutta, and in 1886 passed his examination as a schoolmaster, obtaining his certificate. On the death of his father Mr. Winn decided to adopt a mercantile career, in which he has attained considerable success, the business having greatly increased under his able supervision. He has been associated with Freemasonry since the year 1891 and has obtained all the degrees attainable in India. He is a keen volunteer, having been a member of the Allahabad Light Horse since the formation of that corps in 1884. He retired from active volunteering, with the rank of sergeant and the long service medal, in 1905.

ADDENDA.

ASHTON, A. H., deceased.

BIJAY CHAND MAHTAB BAHADUR, Maharaj-Adhiraj of Burdwan, page 191, is now Maharaja-Bhiraj Bahadur Bijay Chand Mahtab.

DEANE, Lt.-Col. Sir Harold, deceased.

DENTITH, A. W., I.C.S., Volume I, page 153, was appointed Deputy Comptroller, India Treasuries, in 1907.

DUDHORIA, Bijoy Singh, page 196, is now Raja Bijoy Singh Dudhoria, Bahadur, the title of "Raja" having been conferred on him on the 26th June, 1908, on the occasion of the celebration of His Majesty the King-Emperor's birthday.

GREEVEN, Hon'ble Mr. R., deceased.

HOLMWOOD, Hon'ble Mr. Justice H., Volume I, page 170, was confirmed as a Judge of the High Court, Calcutta, by Letters Patent, dated 8th January, 1907, in the place of Mr. Justice Pratt, retired.

JACOB, Rev. P. H., deceased.

JAFFER JOOSAB & CO., Bombay, Volume I, page 312. Since the notice was printed, Messrs. Jaffer Joosab & Co. have floated an Indian Insurance Company under the style of "All India United Insurance Co., Ld.," with a capital of Rs. 50,00,000 under the Chairmanship of the Hon'ble Sir Pherozeshah M. Mehta, K.C.I.E., which has proved a success. Messrs. Jaffer Joosab & Co. have been appointed its Secretaries.

KEMP, N. W., Volume I, page 175, is now Chief Judge of the Small Cause Court, Bombay, having been promoted to his present appointment on the 30th April, 1907.

MARSH, H., C.I.E., page 169, *add* at end "Married twice, first in 1879, A. M. Smyth King, daughter of the Dean of Leighlin who died in 1881; and again in 1884, Helen Elizabeth, daughter of Rev. J. H. Freke, Rector of Stackallan."

SHAFI, Mian Mahomed, page 235, is now Khan Bahadur Mian Mahomed Shafi. Col. 3, line 22, *after* "and other legislative measures relating to the Punjab," *add* "In recognition of his position in the Punjab Bar, His Excellency the Viceroy has, on the recommendation of the Judges of the Chief Court and the Punjab Government, conferred on him the title Khan Bahadur." Line 27, *after* the word "Fellow" *add* "and Syndic." *Add* at the end "He was one of the earliest workers on the movement which has resulted in the formation of the All India Muslim League and has been elected as the Honorary General Secretary of the Provincial Muslim League, Punjab. In September, 1907, the late Sir Denzil Ibbetson nominated him as a member of the Committee which sat at Simla to consider the future administration of plague measures in the Punjab, and he has done useful work in popularizing plague measures amongst the Mahomedan Community in that Province."

SMITHE, E. DUCANE, deceased.

ERRATA.

ROMAN CATHOLIC CHURCH IN INDIA, page 75, col. 1, 1st line, *for* "Malabar" *read* "Maabar"; line 24, *for* "Malabar" *read* "Maabar"; page 76, col. 1, line 9, *for* "Crissa" *read* "Orissa"; col. 2, line 3, *for* "1718" *read* "1720"; line 17, *for* "1863" *read* "1836"; page 77, col. 1, line 5, *for* "1718" *read* "1720"; line 10 from bottom, *for* "San Thoms" *read* "San Thomé"; page 81, col. 1, line 15 from bottom, *for* "they" *read* "there"; page 83, col. 1, Bibliography, *read*:—
"Philipos, the Syrian Church in Malabar, 1869."
"Kennet, St. Thomas the Apostle of India, 1882."
"Coleridge, Life, etc., *for* '1988' *read* '1886'."
"Cros, Vie de St. Fran Cois Xavier, *for* 'Fran Cois' *read* 'Francois'."

Mr. KARMALLY JOOSAB.

The above was erroneously shown in Vol. I, page 312, as the photograph of Mr. Jaffer. It is the photograph of Mr. Karmally Joosab, the founder of the firm of Messrs. Jaffer Joosab & Co., Bombay.

JEELSOHN, WILHEM, page 349, col. 1, line 16 from bottom, *for* "Mr. Wilhem Jeelsohn" *read* "Mr. Wilhem Jeselsohn."

RAY, G. C., volume I, page 195, line 13, *for* "Assistant Comptroller-General" *read* "Deputy Comptroller-General"; line 6 from bottom, *for* "1900" *read* "1891."

SOLOMON & CO., D., Volume I, page 383, col. 1, lines 23 and 24, *for* "Joint Honorary Secretary of the Jewish Burial Ground" *read* "Honorary Secretary of the Hebrew Burial Board."

Sir DINSHAW M. PETIT, Bart.

The above was erroneously shown in Vol. I, page 365, as the photograph of the late Sir Dinshaw M. Petit. It is the photograph of the present Sir Dinshaw M. Petit, Bart., of Petit Hall, Malabar Hill, Bombay.

J. OF BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY

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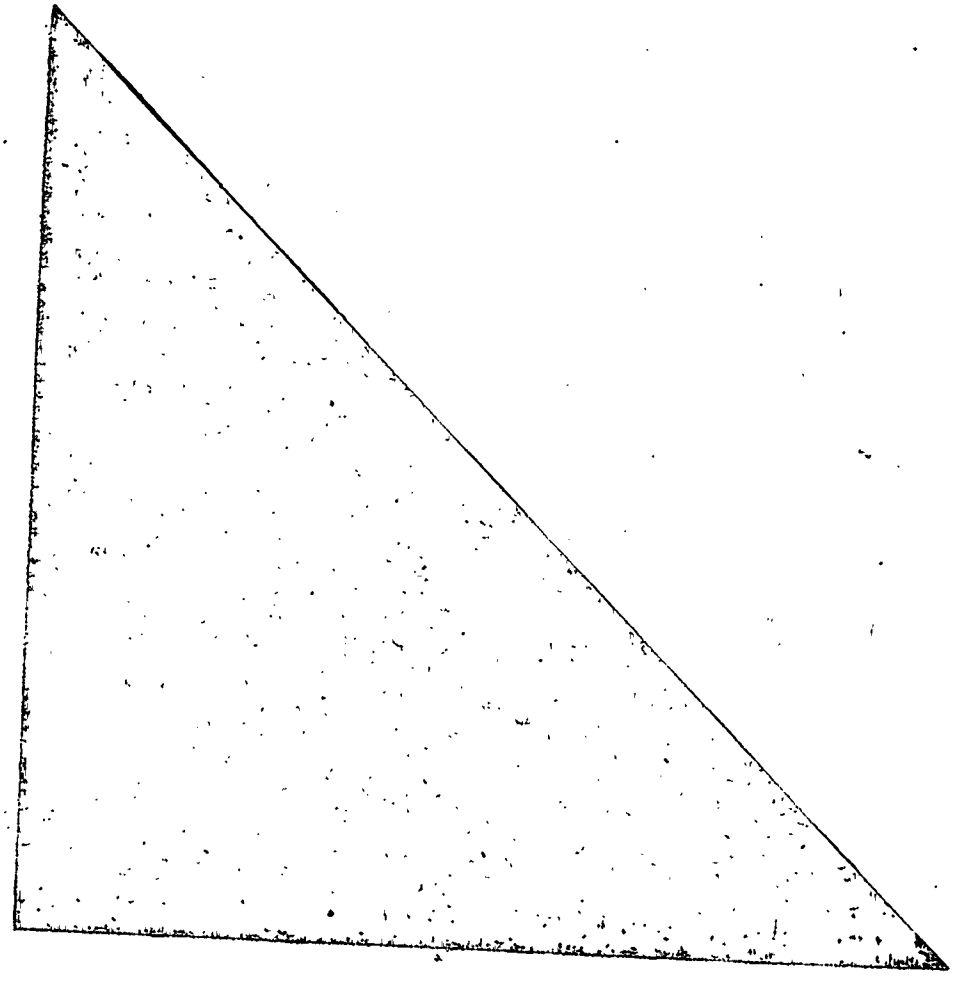

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